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Listing first 45 summaries
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Copyright (c) 1993 - 2000 Comp
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Bovine basic FGF.
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Bos taurus.	0	11-MAR-1991 (first entry)	AAP71145;	ULT 1 71145 AAP71145 standard; protein; 146 AA.	ALIGNMENTS	8.6 155	776 98.6 155 21 AAY904	776 98.6 155 21	98.6 155	0 776 98.6 155 21	776 98.6 155 21	8 776 98.6 155 20	5 //6 98.6 155 19 7 776 98.6 155 19	776 98.6 155 19	4 776 98.6 155	776 98.6 155 18	776 98.6 155 18	776 98.6 155 16	776 98.6 155 16	776 98.6 155	776 98.6 155 14	776 98.6 155 11	776 98.6 155 10	776 98.6 155 8 A	776 98.6	776 98.6 153 16	776 98.6 148 13	776 98.6 146 22 AAG6261	776 98.6 146 22	76 98.6 146	776 98.6 146 9 AAP82579	787 100.0 273 22 AAB49	
						Human fibroblast g	Human FGF-2 (bFGF)	(bFGF), SEQ	Human fibroblast q	fibroblast	blast growth	18 kD isoform of h	I8 KDA TOTM OI IID Fibroblast growth	/ mutant of i			Human fibronectin	0	Fibroblast growth Human bFGF Homo	5 hbFG	Human bFGF peptide	n basic		e of h	Human basic fibrob	₽	truncat			Human FGF-2 protei		-	

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ARESSEE OF THE PROPERTY OF THE
                                  Claim 1; Page 24; 29pp; English.
                                                                                                                                 Pure basic fibroblast growth factor - produced by inser synthesised DNA chain into cloning vector and producing transformed cell lines.
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Matches
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                    peptide analogues can be used in human and veterinary medicine for diagnosing and treating vasoproliferative diseases of the eye (e.g. diabetic retinopathies), kidney (e.g. glomerulonephritis), tumours (e.g. chondrosarcoma), adrenal vascularisation and to inhibit
                                                                                      used
                                                                                                                                                                                                                                                                                                                                                                                                                                        Fibroblast growth factor; fragment; analogue; antagonist; grvasoproliferation; diabetic retinopathy; glomerulonephritis; chondrosarcoma; addrenal vascularisation; neovascularisation; melanomas; hst/K53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transformed by a vector carrying the sequence encoding the polypeptide. The bFGF peptides are mitogenic for a wide variety coultured diploid cells, may be used in promoting in vitro growth cell lines, and in eliciting an angiogenic response and thus in
                                                                                                  analogues of
                                                                                                                                                                     glomerulonephritis
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        neovascularisation
                                                                                                                                            Disclosure; Page 1; 12pp; English.
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                                                                      peptide is a bovine basic fibroblast growth factor. Truncated logues of this peptide (esp. comprising residues 24-68) can be d as bFGF antagonists, and can therefore interact or inhibit the receptor and modulate endothelial and other cell growth. The
                                                                                                                                                                                    polypeptide(s) as fibroblast growth factor antagonists
atment of chondrosarcoma, diabetic retinopathy and
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Pred. No. 5e-78;
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09-NOV-1984;
20-JUN-1985;
10-DEC-1986;
31-DEC-1987;
This substantially pure protein was purified from partially purified basic fibroblast growth factor (FGF) by cation exchange HPLC and two reverse-phase HPLC steps. Having purified this protein to apparent homogeneity the amino acid sequence can be determined and pure basic FGF may be synthesised using recombinant DNA techniques (see also AAQ29741). This peptide is biologically active and exhibits either ror random disulphide bonding within the molecule. This protein, an analogue, a biologically active fragment, or a non-toxic salt of it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        also be effective in combating the growth of human melanomas and other melanocytes and the growth promotion of certain related oncogenes such as hst/K53. See also AAR25944-5.
                                                                                                                                        Purified mammalian basic fibroblast recombinant method, is useful e.g. f
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factor (FGF) comprising 0.008-6.1 mg of a mammallan FGF comprising sequence of 140 ((II) and (XII)), 146 ((IV) and (V)), 205 (VI), 266 (VII), 207 ((VIII) and (XI)), 215 (IX), and 208 (X) amino acids (aa), given in the specification, its angiogenically active fragment or mutein. The product of the invention has angiogenic and cardiant activity. (I) is used for treating a human patient for coronary artery disease, and inducing angiogenesis in the human heart. (I) further provides an adjunct for reducing post myocardial infarction injury in humans. The unit dose provides the human patient with a rapid and therapeutic cardiac angiogenesis sufficient to obviate surgical
                                                                                                                                                                                Novel unit dose comprising fibroblast growth factor, its angiogenically active fragment or mutein for inducing cardiac angiogenesis, treating coronary artery disease and reducing post myocardial infarction injury
                                                                                                                                                                                                                                                                    Kavanaugh WM,
                                                                                                                                                                                                                                                                                             (CHIR )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY87848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      procedures,
                                                                                                                        This invention describes a novel unit dose (I), of fibroblast growth
                                                                                                                                                 Claim
                                                                                                                                                                                                                                   N-PSDB;
                                                                                                                                                                                                                                                                                                                                  13-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                        13-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                 20-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                        WO200021548-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                     coronary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FGF-2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovine FGF-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   may be used
therapeutic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
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                                                                                                                                                                                                                                               2000-317840/27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       146;
                                                                                                                                                1; Page 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fibroblast
                                                                                                                                                                                                                                   AAA39555
                                                                                                                                                                                                                                                                                             CHIRON CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                     artery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uses. This may be used in in vitro cell eg. nerve regeneration and wound healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in a pharmaceutical composition for diagnostic or uses. This may be used in in vitro cell prolifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
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                                                                                                                                                                                                                                                                                                                                                        99WO-US22936
                                                                                                                                                                                                                                                                                                                                                                                                                                                       disease;
                                                                                                                                               67pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 growth
                                                                                                                                                                                                                                                                                              ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor; cardiant; treatment; angiogenesis;
myocardial infarction injury; bovine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               146
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 787;
Pred. No. !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  proliferation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
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RESULT
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Best Local S
Matches 146
                                                                                                                                                                                                                     03-SEP-1998;
13-OCT-1998;
13-OCT-1998;
                                                                                                                   Composition for inducing angiogenesis disease comprises fibroblast growth fa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the treated patient's (ETT), compared to an increase of 30 seconds for current modes treatment. This sequence represents the bovine FGF-2 protein fragment described in the method of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     patients's exercise tolerance time (ETT). It also provides a safe and therapeutically efficacious treatment for the patients with coronary artery disease that lasts at least 6 months before a further treatment is needed. The method provides superior increase of 1.5-2 minutes in
                                                                                                                                                     N-PSDB;
                                                                                                                                                                                                                                                                                                                                   Bos taurus
                                                                                                                                                                                                                                                                                                                                                       coronary
                                                                                                                                                                                                                                                                                                                                                                  FGF-2; cow;
                                                                                                                                                                                                                                                                                                                                                                                                             30-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY81941;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY81941 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                     (CHIR )
                                                                                                                                                                                                                                                                 27-AUG-1999;
                                                                                                                                                                                                                                                                                       16-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   intervention and results in an superior increase in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 tgqyklgpktgpgqkailflpmsaks 146
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGQYKLGPKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                palpedggsgafppghfkdpkrlycknggfflrihpdgrvdgvreksdphiklqlqaeer 60
                                                                                                                                                                2000-256860/22.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             al Similarity
146; Conserv
                                                                                                                                                                                     CHIRON CORP.
WHITEHOUSE M
                                                                                                                                                     AAA07355
                                                                                                          or,
                                                                                                                                                                                                                                                                                                                                                      artery disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                      fibroblast growth factor 2; angiogenesis; unstable angina tery disease; human; acute myocardial infarction; therapy.
                                                                                                          mutein
                                                                                                                                                                                                                                                                                                                                                                                        bovine
                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                    98US-0145743.
98US-0104102.
98US-0104103.
                                                                                                                                                                                                                                                                 99WO-US19770
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                                                                                                                                                                                                      FGF-2 protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        146
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Pred. No. 5e-78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                        sequence.
                                                                                                                    is or treating factor-2 or an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                    angiogenically active
                                                                                                                                coronary artery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
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                                                                                                                                                                                                                                                                                                                                                                  angina;
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This sequence represents a recombinant bovine fibroblast growth factor-2 (FGF-2) sequence. The invention relates to a unit dose composition (I) for inducing angiogenesis in a human, comprising 0.008-7.2 mg of FGF-2 or an angiogenically active fragment or mutein of FGF-2. The composition (I) and recombinant FGF-2 are useful for treating coronary artery disease or inducing angiogenesis in a human patient. Recombinant FGF-2 may be used to treat unstable angina and acute myocardial

Claim 3;

Page 58-59; 60pp;

English.

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RESULT
AAE11973
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Best Local
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                                           The present invention relates to a method for treating or preventing erectile dysfunction, comprising administering a fibroblast growth factor (FGF), epidermal growth factor (FGF), platelet derived growth factor (PDGF), vascular endothelial growth factor (VEGF) or tissue growth factor (TGF). The invention is used to treat or prevent erectile
                                                                                                                                   growth in the
                                                                                                                                                                                                                                                                                                                                                                                          Bovine; therapy; erectile dysfunction; fibroblast growth factor-2; F epidermal growth factor; EGF; platelet derived growth factor; PDGF; vascular endothelial growth factor; VEGF; tissue growth factor; TGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAE11973 standard; Protein; 146 AA
                                                                                                                                                                                                                                                                                             09-MAR-2001; 2001WO-US07702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                              Claim 6; Page 31; 35pp; English.
                                                                                                                                              Treating or preventing erectile dysfunction, or growth factor, particularly fibroblast growth
                                                                                                                                                                                WPI; 2001-616273/71.
N-PSDB; AAD19520.
                                                                                                                                                                                                                                                           10-MAR-2000;
11-MAY-2000;
                                                                                                                                                                                                                                                                                                                  20-SEP-2001
                                                                                                                                                                                                                                                                                                                                       WO200168125-A2
                                                                                                                                                                                                                                                                                                                                                             Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-DEC-2001
Sequence
                                 dysfunction, or impotence. The present sequence is a bovine FGF-2
                                                                                                                                                                                                                                   (CHIR ) CHIRON CORP
                                                                                                                                                                                                                                                                                                                                                                                  imporence;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146;
                                                                                                                                   factor, particularly fibroblast
penis, groin or leg -
                                                                                                                                                                                                                                                                                                                                                                                                                                        fibroblast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         146
                                                                                                                                                                                                                                                                                                                                                                                  vasotropic
  146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                           2000US-188480P
2000US-203415P
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  A
                                                                                                                                                                                                                                                                                                                                                                                                                                       growth factor-2 (FGF-2) #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 787; DB 2
Pred. No. 5e-78;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21;
                                                                                                                                               comprises administering h factor to blood vessels
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Query Match

100.0%;

Score 787;

DВ

22;

Length 146;

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     AAP80613
The published AA sequence of bovine basic FGF was used as a basis for the synthesis of mfd. bFGF gene for expression in E. coli. The nucleotide sequence of this mfd. gene includes codons most often used by E. coli and the inclusion of convenient restriction sites. Oligonucleotides corresp. to both strands of the gene were synthesized in overlapping sections and sesembled into 2 larger sections by hybridation and subsequent ligation. The 2 larger sections were then cloned into an approp. phage vector (M13mp18) for nucleotide sequence analysis. The sections were then cliqued into an expression vector and introduced into E. coli. Bovine and human basic FGF are known to differ by only two AAs. Site directed mutagenesis was used to convert the bovine gene into one coding for the cells of mesodermal origin and may be chemotactic for endothelial cells and fibroblasts. The basic FGF induces neovascularisation and may be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity Matches 146; Conserv
                                                                                                                                                                                                                                          DNA encoding human basic fibroblast growth used for expression in an E coli host with non-heparin contg. chromatographic column
                                                                                                                                                                                                                                                                                                   WPI; 1988-199640-29
N-PSDB; AAN81236.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bovine basic phage vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence of manufactured (bFGF) for expression in
                                                                                                                                                                                                                                                                                                                                             Banks
                                                                                                                                                                                                                                                                                                                                                                        (AMGE-) AMGEN INC
                                                                                                                                                                                                                                                                                                                                                                                                   03-NOV-1987;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EP275204-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-SEP-1990
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                                                                                                                                                                                                                 Example; Fig 2; 21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fibroblast growth factor M13mp18.
                                                                                                                                                                                                                                                                                                                                                                                                   87US-0116430
                                                                                                                                                                                                                                                                                                                                                                                                                               88EP-0300303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="changed to Ser"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note≖"changed
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bovine basic
E. coli.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bFGF); wound healing; mitogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fibroblast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5e-78;
                                                                                                                                                                                                                                                           purification
                                                                                                                                                                                                                                                                          factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
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                                                      Query Match
Best Local Similarity
Matches 146; Conserv
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Best Local
                                                                                                                   Bovine basic fibroblast growth factor (bFGF), which is converted by modified base features to analogues and to human bFGF by site-directed mutagenesis of the DNA encoding it (see AAN90034)
                                                                                                                                                                         Stable basic fibroblast growth factor analogues - used to treat wounds and generate tissue and organs
                                                                                                                                                                                                     N-PSDB; AAN90034.
                                                                                                                                                                                                                                                                                                                        WO8904832-A
                                                                                                                                                                                                                                                                                                                                                                    Bovine basic fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                          AAP90085 standard; protein;
                                                                                                  Sequence
                                                                                                                                                         Disclosure; fig 2; 67pp; English.
                                                                                                                                                                                                               WPI; 1989-178359/24.
                                                                                                                                                                                                                               Arakawa T,
                                                                                                                                                                                                                                                 (AMGE ) AMGEN INC.
                                                                                                                                                                                                                                                                   24-NOV-1987;
                                                                                                                                                                                                                                                                                    22-NOV-1988;
                                                                                                                                                                                                                                                                                                      01-JUN-1989
                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                                                                                          wounds; tissue generation.
                                                                                                                                                                                                                                                                                                                                                                                    Bovine basic fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                         AAP90085;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
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GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
                tgqyklgpktgpgqkailflpmsaks 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tch 100.0%; al Similarity 100.0%; 146; Conservative (
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                                                                                                   147 AA;
                                                                                                                                                                                                                               Fox GM;
                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
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                                                                                                                                                                                                                                                                   87US-0271521.
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                                                               100.0%;
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                                                       0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                           147
                                                      Score 787; DB 10;
Pred. No. 5e-78;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 787; DB 9
Prec. No. 5e-78;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                   factor; analogues; heal
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Best Local Similarity
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12-SEP-1985;
16-DEC-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide
Protein
                                                                                                                                                                      The N-terminal AA sequence of both acidic and basic bovine FGF ar used to construct long probes to screen human and bovine genomic libraries for FGF genes. Isolated sequences are used in vector construction etc. and used to transform CV-1 cells for FGF prodn.
                                                                                                                                                                                                                                  New DNA sequences encoding mammalian fibroblast growth factors useful in prodn. of pure factors for use in wound healing and tissue repair and of probe for tumour testing
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wound healing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAP70671;
                                                                                                                                                     Sequence
                                                                                                                                                                                                                  Claim 11; Fig 3; 89pp; English.
                                                                                                                                                                                                                                                                       WPI; 1987-093786/13.
N-PSDB; AAN71024.
                                                                                                                                                                                                                                                                                                                                                                                                          WO8701728-A
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                                                                                                                                                                                                                                                                                                                   (BIOT-) BIOTECHN RES PARTNE
                                                                                                                                                                                                                                                                                                                                                                        11-SEP-1986;
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122 tgqyklgpktgpgqkailflpmsaks 147
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                                             GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGQYKLGPKTGPGQKAILFLPMSAKS 146
                                   gvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrkysswyvalkr 129
                                                                                                                                                                                                                                                                                                  JC,
                                                                                                                                                      155
                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                 Abraham JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bovine
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                                                                                                                                                                                                                                                                                                                                   86US-0869382.
85US-0775521.
85US-0809163.
                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tissue repair;
                                                                                                                                                                                                                                                                                                                                                                      86WO-US01879
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 basic
                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155
                                                                                                         0;
                                                                                                       Score 787; DB 8; L
Pred. No. 5.4e-78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tumour probe
 155
                  146
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                                                                                                                          Length 155;
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RESULT :
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Best Local Similarity
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12-SEP-1985;
16-DEC-1985;
30-MAY-1986;
30-MAR-1992;
01-APR-1994;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Recombinant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW20029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW20029 standard; Protein; 155
                                                                                                                                                             treatment of cell cultures in vitro before transplant and release of tissue plasminogen activator or collagenase, etreatment of a chronic tendency to form embolism. Recombin
                                                                                                                                                                                              damaged myocardial tissue etc. and, since it increases neuronal survival and promotes neurite outgrowth, may also be used in treatment of neurological disorders such as Alzheimer's and Parkinson's diseases bFGF may also be used for detection of specific inhibitors; for
                                                                                                                                                                                                                                                                                               diseases, suitable for production
                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAT71236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12-SEP-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-FEB-1997
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          neurodegenerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18-SEP-1997
                                                                                                                                 Sequence
                                                                                                                                                     be produced
                                                                                                                                                                                                                                Recombinant bFGF is used to promote healing of wounds, bone fractures, damaged myocardial tissue etc. and, since it increases neuronal
                                                                                                                                                                                                                                                      AAW20029 is a recombinant bovine basic fibroblast growth factor (bFGF)
                                                                                                                                                                                                                                                                         Example 5; Fig 3; 34pp; English.
                                                                                                                                                                                                                                                                                                                                                                          Abraham JA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide
                                                                                                                                                                                                                                                                                                                      New high
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            61
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                                10
                                                                                                                                                                                                                                                                                                        high purity, recombinant human basic fibroblast growth factor promoting wound healing and treating neuro:degenerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            taurus
                              fibroblast growth factor; basic; ac
GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR
                                                                                                                                                                                                                                                                                                                                                      1997-234676/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fracture;
                                                                             146;
                                                                                                                                                                                                                                                                                                                                                                                               SCIOS
                                                                                                                                  155
                                                                                                                                                       on a large scale.
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                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                          Fiddes
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                                                                                                                                                                                                                                                                                                                                                                                               INC.
                                                                                                                                                                                                                                                                                                                                                                                                                   86US-0869382.
92US-0860688.
94US-0221462.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 87US-0050706.
85US-0775521.
85US-0809163.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                biologically active; embolism
                                                                                                                                  AA;
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10..155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label=
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           basic fibroblast growth
                                                                                      100
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sig_peptide
                                                                                       .0%;
                                                                            0;
                                                                          Score 787; DB 18;
Pred. No. 5.4e-78;
Mismatches 0;
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                                                                                                                                                                                                                                                                                                on large scale
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acidic; wound
s; Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           factor.
                                                                                                                                                                    Recombinant bFGF can
                                                                             Indels
                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d healing;
s disease;
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RESULT :
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Best Local S
Matches 146
                                                                                                                                                                                                                  The present invention relates to a method for treating or preventing erectile dysfunction, comprising administering a fibroblast growth factor (FGF), peidermal growth factor (FGF), platelet derived growth factor (PGF), vascular endothelial growth factor (VEGF) or tissue growth factor (TGF). The invention is used to treat or prevent erectile dysfunction, or impotence. The present sequence is a bovine FGF-2
                                                                                                                                                                                                                                                                                                                     growth
in the
                                                                                                                                                                                                                                                                                                                                Treating or preventing erectile dysfunction, comprises administering growth factor, particularly fibroblast growth factor to blood vessels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovine; therapy; erectile dysfunction; fibroblast growth factor-2; epidermal growth factor; EGF; platelet derived growth factor; PDGF; vascular endothelial growth factor; VEGF; tissue growth factor; TGF
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                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                  Claim 6;
                                                                                                                                                                                                                                                                                                                                                                 N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                 Whitehouse
                                                                                                                                                                                                                                                                                                                                                                                                                                          10-MAR-2000;
11-MAY-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAE11975
                                                                                                                                                                                                            protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               impotence; vasotropic
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                                                                                   gvvsik gvcanrylamked grllask cvtdec fferlesnnyntyrsrkysswyvalkr\\
                                                     GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
                                                                                                                                                                                                                                                                                                                                                                            2001-616273/71
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tgqyklgpktgpgqkailflpmsaks
                      TGQYKLGPKTGPGQKAILFLPMSAKS
                                                                                                                                  11 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fibroblast
                                                                                                                                                                                                                                                                                                                       penis,
                                                                                                                                                                                                                                                                                                                                                                  AAD19522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard; Protein;
                                                                                                                                                                                                                                                                                                 Page 33;
                                                                                                                                                                                                                                                                                                                                                                                                 MJ;
                                                                                                                                                                                        155
                                                                                                                                100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-188480P
2000US-203415P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001WO-US07702
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                                                                                                                                                                                                                                                                                                                       groin or leg
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                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     growth
                                                                                                                                                                                                                                                                                                 35pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
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                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155
                                                                                                                                  Score 787; DB 22;
Pred. No. 5.4e-78;
Mismatches 0;
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RESULT 1
AAP82579
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AC AAP8
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AAB49978
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Best Local
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                                                                                                                                                                                                                                  The present invention describes a novel method for determining the 3-dimensional structure of a macromolecule, particularly a protein. The method involves generating intramolecular crosslinks of known length between the residues of the protein, separating those proteins containing intramolecular bonds, exposing these to a protease so that peptide fragments are produced, identifying these fragments so that their position within the protein is known, and interpreting the data to determine the protein structure. This method can be used in the study of
                                                                                                                                                                                                                                                                                                                        Determining three dimensional structure of polypeptide or nucleic molecules, by use of an integrated technique of determining physic distance constraints and analysis of constraint information -
                               AAP82579 standard;
                                                                                                                                                                                                                            determine the protein structure. proteomic and genomic information
                                                                                                                                                                                                                                                                                                          Example 2;
                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-049881/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Macromolecule;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3-D structure
02-NOV-1990
                AAP82579;
                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                 26-MAY-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unidentified
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                                                                                                                                                                              Local Similarity
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                                                                                                                                    TGQYKLGPKTGPGQKAILFLPMSAKS 146
                                                                     GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
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                                                                                                                                                                     Conservative
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26-AUG-1987;
26-JAN-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA encoding the protein was isolated from a cDNA library prepd from mRNA from human foreskin derived primary culture cell. It can be used to produce recombinant hbFGF for produ. of MAbs specific for bFGF (do not cross react with acidic FGF). High purity bFGF is also useful for promoting healing of burns and
Human; basic fibroblast growth factor; recombinant; wound healing;
revascularise; regenerate; neural tissue;.
                                                                                                                                 AAR25423;
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                                                                                            06-JAN-1993
                                                                                                                                                                   AAR25423 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87JP-0049759.
87JP-0211599.
88JP-0016260.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Derived basic fibroblast growth factor - for treating ulcers, regenerating damaged neural tissue, aiding tissue transplant bone graft and revascularising ischaemic tissue
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Modified-site
            FGF-2; fibroblast growth factor; cardiant; treatment; angiogenesis;
coronary artery disease; myocardial infarction injury; human.
                                                    Human FGF-2
                                                                             01-SEP-2000
                                                                                                                               AAY87847 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bone graft and revascularising
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forming a covalent S-C bond with Cys"
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Cys"
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CC factor (FGF) comprising 0.008-6.1 mg of a mammalian FGF comprising 0.008 (X) and 208 (X) amino acids (aa), CC (VII), 207 ((VIII) and (XI)), 215 (IX), and 208 (X) amino acids (aa), CC given in the specification, its angiogenically active fragment or mutein. The product of the invention has angiogenic and cardiant of activity. (I) is used for treating a human patient for coronary artery 0.000 corolarly and inducing angiogenesis in the human heart. (I) further 0.000 corolarly and 0.000 corolarly 0.000 cor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel unit dose comprising fibroblast growth factor, its angiogenically active fragment or mutein for inducing cardiac angiogenesis, treating coronary artery disease and reducing post myocardial infarction injury
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Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (CHIR ) CHIRON CORP. (WHIT/) WHITEHOUSE M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-OCT-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               invention describes a novel unit dose (I), of fibroblast growth or (FGF) comprising 0.008-6.1 mg of a mammallan FGF comprising
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gvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrkytswyvalkr 120
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ALIGNMENTS

basic fibroblast growth factor precursor - bovine (fragment)
N;Alternate names: bFGF; kidney-derived growth factor; prostatropin
C;Species: Bos primigenius taurus (cattle)
C;Date: 13-Aug-1966 #sequence_revision 02-Jun-1995 #text_change 24-Nov-1999
C;Accession: A24663; A32878; A33784; A61550; A61551; A60310; A61094; A01386; A
C;Accession: A24663; A32878; A33784; A61550; A61551; A60310; A61094; A01386; A
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C;Accession: A24663; A32878; A33784; A61550; A61551; A60310; A61094; A01386; A
C;Accession: A24663; A32878; A33784; A61550; A;Experimental source: pituitary gland R;Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Fiddes, J.C. Cold Spring Harb. Symp. Quant. 81. 557-668, 1986 A;Title: Human basic fibroblast growth factor: nucleotide sequence. A;Reference number: A90924; MUID:87217066 A;Molecule type: mRNA A;Residues: 3-157 <ABR> A;Cross-references: GB:M13440; NID:g163049; PIDN:AAA30518.1; A;Title: Nucleotide sequence of a bovine clone encoding the angiogenic protein, basic A;Reference number: A94290; MUID:86261806
A;Accession: A24663 R; Abraham, J.A.; Mergia, A Science 233, 545-548, 1986 nucleotide sequence, genomic organizat PID:g163050 A60316;

A; MoLecule type: mRNA A; Residues: 3-157 <AB2> A; Residues: 3-157 <AB2> R; Milner, P.G.; Li, Y.S.; Hoffman, R.M.; Kodner, C.M.; Siegel, N.R.; Deuel, Biochem. Biophys Res. Commun. 165, 1096-1103, 1989 B; Title: A novel 17 kb heparin-binding growth factor (HBGF-8) in bovine uter A; Reference number: A33784; MUID:90121211 R; Bertolini, J.; Hearn, M.T.W. Mol. Cell. Endocrinol. 51, 187-199, 1987 A; Molecule type: protein A; Residues: 1-14 <MIL> A; Note: demonstration of a possible alternative initiator or splice junction bovine uterus: purif T.F.

A; Title: Isolation, characterisation and tissue localisation of an N-terminal-truncat A; Reference number: A61550; MUID:87247652
A; Accession: A61550

A;Molecule type: protein
A;Residues: 16-35 <BER>
R;Ueno, N.; Baird, A.; Esch, F.; Ling, N.; Guillemin, R.
Mol. Cell. Endocrinol. 49, 189-194, 1987
A;Title: Isolation and partial characterization of basic fibroblast growth factor fro A;Reference number: A61551; MUID:87162856
A;Accession: A61551

A; Molecule type: protein
A; Residues: 27-35, 'X', 37-41 <UE3>
A; Experimental source: testes

A;Note: this form appears to be identical to the renal form R;Ueno, N.; Baird, A.; Esch, F; Shimasaki, S.; Ling, N.; Guillemin, R. Regul. Pept. 16, 135-145, 1986
A;Tritle: Purification and partial characterization of a mitogenic factor from bovine A;Reference number: A60310; MUID:87119165

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A, Experimental source: pituitary gland
R, Baird, A.; Esch, F.; Boehlen, P.; Ling, N.; Gospodarowicz, D.
Regul. Pept. 12, 201-213, 1985
A; Title: Isolation and partial characterization of an endothelial
A; Reference number: A60316; MUID:86095426
A; Accession: A60316; MUID:86095426
A; Accession: A60316; MUID:86095426
A; Accession: A60316
A; Residues: 27-35, 'X', 37-43 CHAI>
A; Residues: 27-35, 'X', 37-43 CHAI>
A; Experimental source: Kidney
R; Bohlen, P.; Baird, A.; Esch, F.; Ling, N.; Gospodarowicz, D.
Proc. Matl. Acad. Sci. U.S.A. 81, 5364-5386, 1984
A; Title: Isolation and partial molecular characterization of pitui
A; Reference number: A22054; MUID:84298139
A; Accession: A22054
A; Molecule type: protein
A; Residues: 12-26 CBOH>
C; Comment: The acidic and basic fibroblast growth factors are the
C; Comment: The acidic and basic fibroblast growth factors are the
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A; Title: Isolation of fibroblast growth factor fa; Reference number: A61094; MUID:86081530
A; Accession: A61094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C:Comment: The acidic and basic fibroblast growth factors are the major endothelial-cell ell types in vitro (although bFGF is 30-100 times more potent than aFGF in stimulating to C:Comment: This protein binds heparin more strongly than does aFGF.
C:Superfamily: fibroblast growth factor
C:Keywords: alternative splicing; angiogenesis; blocked amino end; growth factor; heparing:1-157/Product: basic fibroblast growth factor, therine form #status predicted <MAYINF:1-157/Product: basic fibroblast growth factor, pituitary gamma form #status experiment; 12-157/Product: basic fibroblast growth factor, pituitary alpha form #status experiment; 16-157/Product: basic fibroblast growth factor, pituitary short form #status predicted fig.33-157/Product: basic fibroblast growth factor, hepatic form #status experimental <MAYING F:29-33,118-121/Region: heparin binding #status predicted fig.33-157/Product: basic fibroblast growth factor, renal form #status experimental <MAYING F:29-33,118-121/Region: heparin binding #status predicted fibroblast growth factor factor form #status experimental <MAYING F:29-33,118-121/Region: heparin binding #status predicted fibroblast growth factor factor form #status experimental <MAYING F:20-33,118-121/Region: heparin binding #status predicted fibroblast growth factor f
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A; Molecule type: mRNA
A; Residues: 56-210 < KUR>
A; Cross references: GB: M27968; NID: g182562; PIDN: AAA52448.1; FR; Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Fiddes, Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
A; Title: Human basic fibroblast growth factor: nucleotide sequal, Reference number: A90924; MUID: 87217066
                                                                                                                                                                                                                                                                                     A;Note: authors translated the codon GGA for residue R;Kurokawa, T.; Sasada, R.; Iwane, M.; Igarashi, K. FEBS Lett. 213, 189-194, 1987. A;Title: Cloning and expression of cDNA encoding huma A;Title: cumber: A26642; MUID:87162468 A;Accession: A26642
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A; Residues: 1-114 <SHI>
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N

number: A90924; : B32878

sequence,

genomic organizat

PID:g182563

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A;Reference number: $00185; MUID:88055577
A;Accession: $00185
                                                                                                                                                                                                                                                                                                                                         C;Superfamily: fibroblast growth factor C;Keywords: growth factor; heparin binding; mitogen F;18-22/Region: heparin binding #status predicted F;107-110/Region: heparin binding #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Simpson, R.J.; Moritz, R.L.; Lloyd, C.J.; Fabri, FEBS Lett. 224, 128-132, 1987
A;Title: Primary structure of ovine pituitary basi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N;Alternate names: prostatropin
C;Species: Ovis orientalis artes, Ovis ammon aries
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999
C;Accession: S00185
                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: protein A; Residues: 1-146 <SIM>
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basic fibroblast growth factor -
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Best Local
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121
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                     TGQYKLGPKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                               PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
                                                                              GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR
                                                                                                 GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVÄLKR 120
                                                                                                                                                            PALPEDGGSSAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
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45; Conservative
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99.3%;
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#text_change 10-Sep-1999
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C;Species: Homo sapiens (man)
C;Date: 31-Jul-1989 #sequence_revision 31-Dec-1993 #text_change 21-Jul-2000
C;Accession: A32398; A61537; A26642; B32878; S00297; A54316; B54316; A33624; A25824; R;Prats, H.; Kaghad, M.; Prats, A.C.; Klagsbrun, M.; Lellas, J.M.; Liauzun, P.; Chalc Proc. Natl. Acad. Sci. U.S.A. 86, 1836-1840, 1989
A;Title: High molecular mass forms of basic fibroblast growth factor are initiated by A;Reference number: A32398; MUID:89184522
A;Accession: A32398; MUID:89184522 A;Cross-references: GB:J04513; NID:g183083; PIDN:AAA52531.1; R;Shibata, F:; Baird, A.; Florkiewicz, R.Z. Growth Factors 4, 277-287, 1991
A;Title: Functional characterization of the human basic fibro A;Reference number: A61537; MUID:92110035
A;Accession: A61537 basic fibroblast growth factor precursor, 22.5K form - N;Alternate names: bFGF; fibroblast growth factor 2; pr N;Contains: basic fibroblast growth factor, 18K form A; Molecule type: mRNA A; Residues: 1-210 < PRA> human basic fibroblast growth 2; prostatic growth factor; PID:g459811 factor prostat γď

47

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Ala

basic fibroblast growth factor

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A;ACCession.
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 54-210 <SON>
A;Cross-references: EMBL:M17599; NID:g183086; PIDN:AAA52534.1; PID:g183087
A;Cross-references: EMBL:M17599; NID:g183086; PIDN:AAA52534.1; PID:g183087
A;Cross-references: EMBL:M17599; NID:g183086; PIDN:AAA52534.1; PID:g183087
A;Titlano, M.W.; Horlick, R.A.; Springer, B.A.; Van Dyk, D.E.; Tobery, 'Biochemistry 33, 10229-10248, 1994
A;Title: Multivalent ligand-receptor binding interactions in the fibroblas
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A; McCecule type: protein
A; Molecule type: protein
A; Residues: 65-88,'X',90-98,'X',100 <GAU>
A; Residues: 65-88,'X',90-98,'X',100 <GAU>
A; Residues: 65-88,'X',90-98,'X',100 <GAU>
Biochem, Biophys. Res. Commun. 144, 543-550, 1987
Biochem. Biophys. Res. Commun. 144, 543-550, 1987
A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with an A; Title: A form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with a form of human basic fibroblast growth factor with 
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A; Residues: 56-210 <ABR>
A; Rosidues: 56-210 <ABR>
A; Note: the authors translated the codon GAA for residue 108 as
R; Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Friedman,
2523-2528, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A. PULLY, M.T.; Esch, F.; Shimasaki, S.; Sasse, J.; Jacobs, S.C.; Lawson, R.K. Blochem. Blophys. Res. Commun. 142, 702-709, 1987

A.;Title: Amhino-terminal sequence of a learge form of basic fibroblast growth factor A; Reference number: A25824; MUID:87156686

A.;Accession: A25824

A.;Molernin 4----
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A;Residues: 'XX',86-88,'X',90-91,'X',93-95 <SH3>
A;Experimental source: C-Li2l hepatocellular carcinoma cell
A;Experimental source: NCBI backbone (NCBIP:71595)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein
A; Residues: 65-102, 'X',104-105 <GIM>
A; Experimental source: brain
R; Gautschi, P.; Frater-Schroder, M.; Bohlen,
FEBS Lett 204, 203-207, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: Partial molecular characterization of endothelial cell mitogens from human A;Reference number: A91364; MUID:86275260 A;Accession: B24301
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R;Gimenez-Gallego, G.; Conn, Con, Hatcher, V.B.; Thomas,
Biochem. Biophys. Res. Commun. 135, 541-548, 1986
A;Title: Human brain-derived acidic and basic fibroblast
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A;Accession: A33624
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A;Title: Differential effects of heparin, fibronectin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: protein
A; Residues: 'XXX',19','X',21-29 <SH2>
A; Note: sequence extended from NCBI backbone (NCBIP:71594)
A; Note: sequence extended from NCBI backbone (NCBIP:71594)
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A;Title: Characterization of high-molecular-mass forms of basic fibroblast growth
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A;Title: Human basic fibroblast growth factor: nucleotide sequence and genomic organiza. A;Reference number: S00297; MUID:87053817
A;Accession: S00297
A; Molecule type: protein A; Residues: 54-71 < PAN>
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A;Accession: A54316
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A;Cross-references:
R;El-Husseini, A.E.
                                                                                A; Molecule type: mRNA
A; Residues: 1-154 <KUR>
                                                                                                                                                                                                                     A; Title: Nucleotide sequence of rat basic A; Reference number: S00876; MUID:88262516
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A; Residues: 1-154 <SHI>
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S00876

fibroblast

PID:g204286

basic fibroblast

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EMBL:X07285;

NID:g56203; J.A.; Myal,

PIDN:CAA30265. Y.; Shiu, R.P.

PID: 956204

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C;Accession: A316/4; account Roba, A.; Mercauc, R;Shimasaki, S.; Emoto, N.; Koba, A.; Mercauc, R;Shimasaki, S.; Emoto, N.; Koba, A.; Mercauc, Biochem. Blophys. Res. Commun. 157, 256-263, 1988 A;Title: Complementary DNA cloning and sequencing A7itle: Complementary DNA cloning and sequencing A31674; MUID:89061721
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                                                                                                                                        basic fibroblast growth factor precursor - rat
N;Alternate names: bFGF
C;Species: Rattus norvegicus (Norway rat)
C;Date: 21-May-1990 #sequence_revision 21-May-1990 #text_change 16-Jul-1999
C;Accession: A31674; S00876; S24309
                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Keywords: alternative initiators; angiogenesis; growth factor; heparin binding; mit F;1-210/Product: basic fibroblast growth factor, 22.5K form #status predicted <MA2> F;65-210/Product: basic fibroblast growth factor, 18K form #status predicted <MAT> F;82-86/Region: heparin binding #status predicted
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A;Title: Purification and characterization of the 210-amino A;Reference number: S46253; MUID:94320639
                                                                                                                                                                                                                                                                                                                                                                                                   B
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C;Superfamily: fibroblast growth factor
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A; Residues: 39-53;65-88 <PAT>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Map position: 4q25-4q27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
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Pred. No. 6e-70;
1; Mismatches
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1988
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R;Hebert, J.M.; Basilico, C.; Goldfarb, M.; Haub, O.; Martin, Dev. Biol. 138, 454-463, 1990
A;Title: Isolation of cDNAs encoding four mouse FGF family mer A;Reference number: A37360; MUID:90201563
A;Accession: C37360
          fibroblast growth factor - rabbit (fragment) C;Species: Oryctolagus cuniculus (domestic rabbit) C;Date: 14-Feb-1997 #sequence_revision 14-Feb-1997 C;Accession: 146711
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146711
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A;Residues: 1-154 <HEB>
A;Cross-references: GB:M30644; NID:g193296; PIDN:AAA37621.1; PID:g309239
C;Superfamily: fibroblast growth factor
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R; Winkles,
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PCR detection of the rat brain basic fibroblast growth factor (bFGF) mRNA contance number: S24309; MUID:92329546
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97.3%;
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MUID:90201563
Alberts,
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Pred. No. 1.9e-68;
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Pred. No. 5.9
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G.F.;
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R;Mitrani, E.; Gruenbaum, Y.; Shohat, H.; ZIV, T. Development 109, 387-393, 1990
A;Title: Fibroblast growth factor during mesoderm A;Reference number: $23636; MUID:90382254
A;Accession: $23636
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R;Borja, A.Z.; Meijers, C.; Zeller, R.
Dev. Biol. 157, 110-118, 1993
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Gallus gallus (chicken)
C;Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 16-Jul-1999
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A; Residues: 1-137 <WIN>
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A;Title: Elevated expression of basic fibroblast growth factor in an immortalized rab A;Reference number: 146711; MUID:93343209
A;Accession: 146711
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A; Residues: 95-128 <MIT>
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A; Residues: 1-189 <BOR>
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               TGQYKLGPKTGPGQKAILFLPMSAKS
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                                                                  GVVSIKGVSANRFLAMKEDGRLLALKCATEECFFFERLESNNYNTYRSRKYSDWYVALKR
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99.3%;
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Pred. No. 8.2e-66;
4; Mismatches 6;
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Pred. No. 3.6e-66;
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189
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basic fibroblast growth factor - African clawed frog C;Species: Xenopus laevis (African clawed frog) C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999 C;Accession: A40117; A29618 R;Kimelman, D.; Abraham, J.A.; Haaparanta, T.; Palisi, T.M.; Kirschner, M.W Science 242, 1053-1056, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dasic fibroblast growth factor - short-tailed opossum (Monodelphis domestica) (fragment) C:Species: Monodelphis domestica C:Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 12-Apr-1995 C:Accession: S31622 R:Kusewitt, D.F.; Sabourin, C.L.K.; Budge, C.L.; Ley, R.D. submitted to the EMBL Data Library, September 1992 A:Description: Characterization of cDNA encoding basic fibroblast growth factor of the R:Reference number: S31622 A:Accession: S31622
                                                                                                                                                                                                                                                                                                                A;Title: Synergistic induction of mesoderm
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A; Residues: 1-164 <KUS>
A; Cross references: EMBL: Z15154
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A; Residues: 95-110,112-155 <KI2>
C: Superfamily: fibroblast growth
C: Keywords: growth factor
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A; Residues: 1-155 < KIM>
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                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary
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                                   GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALK 119
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                   GVVS1KG1TANRYLAMKEDGRLTSLRC1?DECFFFERLEANNYNTYRSRKYSSWYVALKR
                                                                                                      PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 60
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82.9%;
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Pred. No. 6.3e
8; Mismatches
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Pred. No. 3.1e-64;
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6.3e-57;
17;
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Best Local S
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139
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                                                                                                                                                     PPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANR 72
HYGQKAILFLPLPVSS
                                 GPGQKAILFLPMSAKS 146
                                                                  YLAMDTDGLLYGSQTPNEECLFLERLEENHYNTYTSKKHAEKNWFVGLKKNGSCKRGPRT
                                                                                                  YLAMKEDGRILLASKCVTDECFFFERLESNNYNTYRSRKYS--SWYVALKRTGQYKLGPKT 130
                                                                                                                                   PPGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHIQLQLSAESAGEVYIKGTETGQ
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61.0%;
154
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Biochem. Biophys. Res. Commun. 160, 1267-1274, 1989
A;Title: An amino-terminally extended and post-trans
A;Reference number: A32484; MUID:89273588
A;Accession: A32484
A;Stature.
                                                                                                                  A;Status: not compared with conceptual translation A;Molecule type: DNA A;Residues: 1-155 <HAL> C;Superfamily: fibroblast growth factor C;Keywords: growth factor; heparin binding
                                                                                                                                                                                                                                                                    C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999 (C;Accession: A60721 R;Hall, J.A.; Harris, M.A.; Malark, M.; Mansson, P.E.; Zhou, H.; Harris, S.E. J. Cell. Biochem. 43, 17-26, 1990 A;Title: Characterization of the hamster DDT-1 cell aFGF/HGBF-I gene and cDNA A;Reference number: A60721; MUID:90270291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: mRNA
A;Residues: 1-125 <SOM>
C;Superfamily: fibroblast growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                   acidic fibroblast growth factor - golden hamster N;Alternate names: heparin-binding growth factor 1 C;Species: Mesocricetus auratus (golden hamster)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         basic fibroblast growth factor precursor, 25K - guinea
C; Species: Cavia porcellus (guinea pig)
C; Date: 20-Oct-1989 #sequence_revision 20-Oct-1989 #tex
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                         Score 405; DB 1;
Pred. No. 4.3e-33;
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Pred. No. 3.1e-35;
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     39;
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                                                Length 155;
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138

fibroblast growth

factor

encodes

two

upstream

exon

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acidic fibroblast growth factor 1 precursor [validated] - human N;Alternate names: beta-ECGF; endothelial cell growth factor beta; heparin-binding N;Alternate names: beta-ECGF; endothelial cell growth factor beta; heparin-binding N;Alternate names: beta-ECGF; endothelial cell growth factor beta; heparin-binding N;Alternate names: beta-ECGF; (Species: Homo sapiens (man) (C;Accession: A33665; A32316; S18217; A43804; A24662; JH0707; S35535; S35536; I39413 R;Mergia, A.; Tischer, E.; Graves, D.; Tumolo, A.; Miller, J.; Gospodarowicz, D.; A Blochem. Biophys. Res. Commun. 164, 1121-1129, 1989 A;Title: Structural analysis of the gene for human acidic fibroblast growth factor. A;Reference number: A33665; MUID:90073637
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R;Chiu, I.M.; Wang, W.P.; Lehtoma, K.
Oncogene 5, 755-762, 1990
A;Title: Alternative splicing generates two
A;Reference number: A43804; MUID:90265618
A;Accession: A43804
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R;Wang, W.P.; Lehtoma, K.; Varban, M.L.; Krishnan, I.; Chiu, I.M.
MOI. Cell. Biol. 9, 2387-2395, 1989
A;Title: Cloning of the gene coding for human class 1 heparin-binding growth factor A;Reference number: A32316; MUID:89343957
A;Accession: A32316
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A;Tit.le: Cloning and sequence analysis of A;Reference number: $18217; MUID:92019819
A;Accession: $18217
A;Molecule type: DNA
A;Residues: 1-155 <WA2>
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A; Residues: 1-155 < CHI>
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A; Residues: 1-155 <W
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A; Residues: 1-155 <MER>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: A; Accession: S35535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Title: Cloning of two novel forms of human acidic fibroblast growth factor (aFGF) mRN/A; Reference number: S35535; MUID:93181239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Payson, R.A.; Canatan, H.; Chotani
Nucleic Acids Res. 21, 489-495, 1993
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A; Residues: 1-155 < YUY>
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A; Residues: 1-155 < JAY>
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R;Crumley, G.; D
Biochem. Biophys
                                                                                                                                                                                    A;Status: translation not A;Molecule type: mRNA
                                                                                            A;Cross-references: GB:L01487
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         Dionne,
lys. Res.
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         C.A.; Jaye,
Commun. 171,
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         1990
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A; Molecule type: protein
A; Residues: 16-30, 'X', 32-49 <GAU>
A; Residues: 16-30, 'X', 32-49 <GAU>
A; Residues: 16-30, 'X', 32-49 <GAU>
Biochem. Biophys. Res. Commun. 140, 874-880, A; Title: Amino acid sequence of human acidic A; Reference number: A26386; MUID:87048871
A; Accession: A26386
                                                                                                                                                                                         A;Introns: 57/1; 91/3
C;Superfamily: fibroblast growth factor
C;Keywords: alternative splicing; growth factor; heparin binding
E;16-155/Product: fibroblast growth factor 1 *status experimental
F;129/Binding site: carbohydrate (Asn) (covalent) *status absent
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Blochemistry 33, 7193-7202, 1994
A:Title: Interaction of nucleotides with acidic
A; Reference number: A53639; MUID:94271773
A; Accession: A53639
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A; Residues: 16-47 <GIZ>
A; Experimental source: brain
R; Gautschi, P.; Frater-Schroder, M.; Bohlen,
FEBS Lett. 204, 203-207, 1986
A; Title: Partial molecular characterization
A; Reference number: A91364; MUID:86275260
A; A; Accession: A24301
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A; Accession: A24820
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A; Experimental source: brain
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A;Map position: 5q31.3-5q33.2
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A;Gene: GDB:FGF1; FGFA
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A; Residues:
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PPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANR
                                                                                                                                                                                                                                                                                                                                                                                                                                       type: protein
: 16-30,'X',32-38;73-75,'X',77-97,'X',99-101;128-131,'X',133-140,'X',142-15
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                                                                                                                                                                                                                                                                                                                                                              OMIM:131220
                                                                                            Score
Pred.
                                                                       Mismatches
                                                                                               395; DB 1;
No. 4.3e-32;
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131 GPGQKAILFLPMSAKS

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A:Molecule type: mRNA
A:Residues: 1-155 <GOO>
A:Cross-references: EMBL:X14232; NID:g56351; PIDN:CAA32448.1; PID:g56352
C:Superfamily: fibroblast growth factor
C:Keywords: growth factor; heparin binding
                                                                                                                                                                                                                                                              R;Goodrich, S.P.; Yan, G.C.; Bahrenburg, K.; Mansson, P.E. Nucleic Acids Res. 17, 2867, 1989
A;Title: The nucleotide sequence of rat heparin binding growth factor 1 (HBGF-1). A;Reference number: S04147; MUID:89240051
A;Accession: S04147
                                                                                                                                                                                                                                                                                                                                                                          N;Alternate names: heparin-binding growth factor 1
C;Species: Rattus norvegicus (Norway rat)
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 16-Jul-1999
C;Accession: S04147
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A; Residues: 22-30, 'X', 32-44, 'X', 46-48 <RIS>
C; Superfamily: fibroblast growth factor
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R;Schnuerch, H.; Risau, W.
Development 111, 1143-1154, 1991
A;Title: Differentiating and mature neurons express the acidic fibroblast growth factor A;Reference number: A60130; MUID:91347925
A;Accession: A60130
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C;Species: Gallus gallus (chicken)
C;Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change 16-Jul-1999
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A; Residues: 1-155 <SCH>
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                                             Matches
                                                                Query Match
Best Local
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13 PPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANR 72
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                                                                  Similarity
                                             Conservative
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55.9%;
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Pred. No. 7.6e-32;
Pred. No. 7.6e-32;
                                      Score 391; DB 2;
Pred. No. 1.1e-31;
8; Mismatches 4(
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Search completed: Job time: 242 sec

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A:Molecule type: mRNA A;Residues: I-155 <HEB>- A;Cross-references: GB:M30641; NID:g193284; PIDN:AAA37618.1; PA;Cross-references: GB:M30641; NID:g193284; PIDN:AAA37618.1; PR:Madial, F.; Hackshaw, K.V.; Chiu, I.M. Gene 179, 231-236, 1996 A;Title: Cloning and characterization of the mouse Fgf-1 gene. A;Reference number: JC5231; MUID:97128312 A;Accession: JC5231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Hebert, J.M.; Basilico, C.; Goldfarb, M.; Haub, O.; Martin, G.R. Dev. Biol. 138, 454-463, 1990
A;Title: Isolation of cDNAs encoding four mouse FGF family members A;Reference number: A37360; MUID:90201563
A;Status: preliminary
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A;Introns: 57/1; 91/3
C;Superfamily: fibroblast
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C;Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
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                                                                                                                                                                                                                                                                                                                                                                                                        C; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:U36456
C;Comment: This protein is an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-155 <MAD>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Accession: D37360; JC5231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N; Alternate names: aFGF; FGF-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acidic fibroblast growth factor - mouse
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Best Local
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                                 131 GPGQKAILFLPMSAKS 146
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                                                                                                                                                            PLGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHIQLQLSAESAGEVYIKGTETGQ 78
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                                                                                                                                                                                                                                              76;
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55.9%;
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Pred. No. 1.1e-31;
LB; Mismatches 40
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P20003 ovis aries
P09038 homo sapien
P13109 rattus norv
P15655 mus musculu
P48799 oryctolagus
P48800 gallus gall
P48798 monodelphis
P12226 xenopus lae
P34004 mesocricetu
P05230 homo sapien
P19596 gallus gall
P10935 mus musculu
P20002 sus scrofa
P03968 bos taurus
P48802 brachydanio
P15656 mus musculu
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egul.		factor from the bovine kidney: homology with basic fibroblast growth	v., Gospodarowicz D.;	1	TISSUE=KIGNey;	SEQUENCE OF 23-41.		iocnem. Biopnys. kes. Commun. 138:580-588(1986).		amino terminal extended	d A., ESCh F., Ling N., Guillemin R.;	INE=86295737; PubMed=3741423;	SECULANCE OF 1-9.	14] 10]	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	ACCIDIC FOR		fibroblast growth i	in R.;	Esch F., Baird A., Ling N., Ueno N., Hill F., Denoroy L., Klepper R.,		SEQUENCE OF 10-155.	[3]	Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).	and expression in mammalian cells	"Human basic ribroblast growth factor: nucleotide sequence, genomic	Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.;	MEDIINE=8/21/066; PubMed=34/2/45;	SEQUENCE FROM N.A.		Science 233:545-548(1986).	basic fibroblast growth factor.";	de sequence of a bovine	des J.C.;	Abraham J.A., Mergia A., Whang J.L., Tumolo A., Friedman J.,	MEDLINE=86261806; PubMed=2425435;	SEQUIENCE FROM N.A.	NCBL_TAXID=9913;	٠	Ros Ros	Eukaryota; metazoa; Chordata; Craniata; vertebrata; Eutereoscomi; Mammalia: Buthhoria: Octavidabrula: Duminantia: Docora: Buroidoa:	(Bovine).	FGF2 OR FGF-2.		Kidney-der	Hebarin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast	01-MAR-2002 (Ref. 02, Last apportation undate)	23-0CT-1986 (Rel. 02, Created)	P03969;	FGF2_BOVIN STANDARD; PRT; 155 AA.	LT 1

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Hsu B.T., Rees D.C.;
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 TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY
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Mammmalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
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01-FEB-1996 (Rel. 33,
01-MAR-2002 (Rel. 41,
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                                                                                       This SWISS-PROW entry to constitute of Bioinformatics between the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There a the European Bioinformatics Institutions as long as j
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                                                                                                                                                                                                                                                                                          FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIGGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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MEDLINE=87053817; PubMed=3780670;
Abraham J.A., Whang J.L., Tumolo A., Me
Gospodarowicz D., Fiddes J.C.;
"Human basic fibroblast growth factor:
genomic organization.";
genomic organization.";
                                                                                                                                                                                                                                                                                                                       Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
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01-NOV-1988 (Rel.
01-MAR-2002 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SMART; SM00442; FGF; 1.
                                                                                                              MEDIINE-87217066; PubMed=3472745;
Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.
"Human basic fibroblast growth factor: nucleotide sequence,
organization, and expression in mammalian cells.";
                                                                                                                                                                                                                                                                                                                                                                  FGF2 OR FGFB.
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                                 Sommer A.,
Rifkin D.B
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InterPro; IPR002348; IL1_HBGF
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Kurokawa T., Sasada R., Iwane M., 1941ası. ... "Cloning and expression of cDNA encoding human basic fibroblast growth factor."; FEBS Lett. 213:189-194(1987).
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Protein Sci. 2:1274-1284(1993).
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Eriksson A.E., Cousens L.S., Weav
"Three-dimensional structure of h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=86275260; PubMed=3732516; Gautschi P., Frater-Schroeder M., Bc "Partial molecular characterization human brain: acidic and basic fibrot FEBS Lett. 204:203-207(1986).
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Kurokawa T., Sasada
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                                                                                                                                                                                                                                                                                                      X-RAY CRYSTALLOGRAPHY (1.6 ANGSTROMS).
MEDLINE=94004464; PubMed=7691311;
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Prats H., Kaghad
                                                                                               Ago H., Kitagawa Y., Fujishima A., Mats
"Crystal structure of basic fibroblast
                                                                                                                      x-ray CRYSTALLOGRAPHY (1.6 ANGSTROMS).
MEDLINE=92121151; PubMed=1769963;
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                                   x-ray Crystallography (2.8 ANGSTROMS)
MEDLINE=91095983; PubMed=1702556;
                                                                                  resolution
                                                                                                                                                        "Three-dimensional structure of human basic fibr
a structural homolog of interleukin 1 beta.";
Proc. Natl. Acad. Sci. U.S.A. 88:3446-3451(1991)
                                                                                                                                                                                          K-RAY CRYSTALLOGRAPHY (1.8 ANGSTROMS).
MEDLINE=91195368; PubMed=1849658;
hang J., Cousens L.S., Barr P.J., Spr
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Chalon
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M., Prats A.C., Klagsbrun N
n P., Tauber J.P., Amalric
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da R., Iwane M.,
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on of endothelial cell mitogens
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growth factor at 1.6-A
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EMBL; J04513; AAA52533.1; ALT_INIT.
EMBL; J04513; A26642.4; A26642.
PIR; A25824; A26642.
PIR; B32824; B24243.
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PIR; B324301; B24301.
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BIOCHEMISTRY 35:13552-13561(1996).
BIOCHEMISTRY 35:13552-13561(1996).
-I- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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Science 251:90-93(1991).
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"High-resolution solution structure of basic fibroblast growth
determined by multidimensional heteronuclear magnetic resonance
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PJ3109;
01-JAN-1990 (Rel. 13, Created)
01-JAN-1990 (Rel. 13, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin).
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
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   SEQUENCE OF 1-28 FROM N.A.
STRAIN=SPRAGUE-DAWLEY; TISSUE-Testis;
MEDLINE=97200905; PubMed-9048734;
Pasumarthi K.B.S., Jin Y., Cattini P.
                                                                                            MEDLINE-88262516; PubMed=387229;
Kurokawa T., Seno M., Igarashi K.;
"Nucleotide sequence of rat basic fibroblast growth factor cDNA.";
Nucleic Acids Res. 16:5201-5201(1988).
                                                                                                                                                                                                                       "Complementary DNA cloning and sequencing of rat ovarian basic fibroblast growth factor and tissue distribution study of its mRNA."; Biochem. Biophys. Res. Commun. 157:256-263(1988).
                                                                                                                                                                                                                                                           Cooksey K., Baird A., Ling "Complementary DNA cloning
                                                                                                                                                                                                                                                                                                   Shimasaki
                                                                                                                                                                                                                                                                                                                   STRAIN-SPRAGUE-DAWLEY; TISSUE-Ovary; MEDLINE-89061721; PubMed-3196337;
                                                                                                                                                                        TISSUE=Brain;
                                                                                                                                                                                        SEQUENCE FROM N.A.
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   Cattini P.A.;
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1; Mismatches
                                                                                                                                                                                                                                                                                               A., Mercado M.,
                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE6CE13373007129
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RESULT 5
FGF2_MOUSE
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AC P15655
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Best Local S
Matches 142
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EMBL; W07285; CAA30265.1; -.
EMBL; U78079; AAC53225-1; -.
EMBL; X61697; CAA43863.1; -.
P1R; S00876; S00876.
P1R; A31674; A31674.
HSSP; P09038; 1BFF.
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FGF2_MOUSE STANDARD;
P15655;
01-APR-1990 (Rel. 14, Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
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Pfam; PF00167; FGF; 1.
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TISSUE SPECIFICITY:
MISCELLANEOUS: THIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R detection of the rat brain basic fibroblast growth factor (
, containing a unique 3' untranslated region.";
chim. Biophys. Acta 1131:314-316(1992).
FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC
IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES
VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CONCENTRATION OF THESE 2 GROWTH FACTORS.
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E; PS00247; HBGF_FGF; 1.
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EMBL; AF065903; AAC17503.1; -.
EMBL; AF065904; AAC17504.1; -.
EMBL; AF065905; AAC17505.1; -.
PIR; C37360; C37360.
HSSP; P09038; 1BFF
MGD; MGI:95516; Fgf2
InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF.
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SEQUENCE
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PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
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STRAIN-C57BL/6J, A/J, AND NOD/LtJ; TISSUE-Spleen;
MAR.Z., Teuscher C.;
MAR.Z., Teuscher C.;
Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
-!- SUBUNIT: MONOMER.
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MEDLINE-90201563; PubMed-2318343;

Hebert J.M., Basilico C., Goldfarb M., H

"Isolation of cDNAs encoding four mouse
characterization of their expression pat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-APR-1990 (Rel. 14, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update) Heparin-binding growth factor 2 precursor (HB growth factor) (BFGF) (Prostatropin).
                                                                                                                                                                                                                                                                                                                                                                                                              entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                       the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed
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Mammalia; Eutheria;
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Rodentia;
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HEPARIN (POTENTIAL).
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3; Mismatches
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thi; Muridae;
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129

TGQYKLGSKTGPGQKAILFLPMSAKS 154

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RESULT 6
FGF2_RABIT
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Best Local Sim
Matches 136;
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BINDING
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WIRKLES J.A., Friesel R., Alberts G.F., Janat M.F., Liau G.;
"Elevated expression of basic fibroblast growth factor in an immortalized rabbit smooth muscle cell line.";
Am. J. Pathol. 143:518-527(1993).

-i. PUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 (HBGF-2) (Basic factor) (BFGF) (Prostatropin) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; pF00167; FGF; 1.
proDom; pD000831; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    modified and this statement is not remove
entities requires a license agreement (So
or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
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NCBI_TaxID=9986;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Growth factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=93343209; PubMed=8342599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-NEW ZEALAND WHITE; TISSUE-Smooth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FGF2_RABIT P48799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SMART; SM00442; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; L12034; AAA31248.1; HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oryctolagus cuniculus (Rabbit)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002209; HBGF_FGF.
121
                                          121
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                                                                                         PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
                                                                                                                                                                                        PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
TGQYKLGSKTGPGQKAI
                                               TGQYKLGPKTGPGQKAI 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PS00247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       non-profit institutions as long
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                                                                                                                                                                                                                                                                                                                                                                                                          18
107
137
137 AA;
                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mitogen; Angiogenesis; Heparin-binding 8 22 HEPARIN (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                   110
137
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata; Craniata; Vertebrata; Eut
Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                               15418
                                                                                                                                                                                                                                                                                                              93.5%;
                                                                                                                                                                                                                                                                                                                                                                                                               MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>,</u>
                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                              Score 736; DB 1;
Pred. No. 1.3e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               HEPARIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        not removed
                                                                                                                                                                                                                                                                                                                                                                                                               0D9EE457B88E8C51 CRC64
                                                                                                                                                                                                                                                                                          Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                muscle;
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d for
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RESULT
FGF2_CH
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Best Local S
Matches 136
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FGF2_CHICK
P48800;
01-FEB-1996
01-FEB-1996
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF).

FGF2 OR FGF-2.
                                                                                                                                                                                                                  BINDING
BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                         PROPEP
CHAIN
                                                                                                                                                                                                                                                                               PROSITE; PS0024
Growth factor;
                                                                                                                                                                                                                                                                                                                   InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                 between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restricte use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.lsb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antisense mRNAs during chicken embryogenesis.
Dev. Biol. 157:110-118(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Borja A.Z., Zeller R., Meijers C.;
"Expression of alternatively spliced bFGF first coding "Expression of alternatively embryogenesis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-93246053;
                                                                                                                                                                                                                                                                                                          SMART; SM00442; FGF;
                                                                                                                                                                                                                                                                                                                                                                                   EMBL; M95707; AAA48617.1; -. HSSP; P09038; 1BFF.
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133
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MISCELLANEOUS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SWISS-PROT entry is copyright. It is produced through
                                                                                                              PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 60
TGQYKPGPKTGPGQKAILFLPMSAKS
              TGQYKLGPKTGPGQKAILFLPMSAKS
                                                              GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
                                                  GVVSIKGVSANRFLAMKEDGRLLALKCATEECFFFERLESNNYNTYRSRKYSDWYVALKR
                                                                                                   PALPDDGGGGAFPPGHFKDPKRLYCKNGGFFLRINPDGRVDGVREKSDPHIKLQLQAEER
                                                                                                                                                     al Similarity 93.1
136; Conservative
                                                                                                                                                                                                                                                                                           PS00247;
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6 (Rel. 33,
2 (Rel. 41,
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30
119
158 AA;
                                                                                                                                                                                                                              ; Mitogen; 1
1 12
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19 122
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                                                                                                                                                                                                                                                                                              HBGF_FGF;
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                                                                                                                                                                                                                     17374
                                                                                                                                                                  93.3%;
93.2%;
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                                                                                                                                                                                                                     MW;
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HEPARIN-BINDING GROWTH F
HEPARIN (POTENTIAL).

HEPARIN (POTENTIAL).

7B69B684C17F1816 CRC64
                                                                                                                                                   Score 734; DB Pred. No. 2.4e 4; Mismatches
                                                                                                                                                      4;
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                         146
 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158
                                                                                                                                                                                                                                                                                  Heparin-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HEPARIN MORE STRONGLY THAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                             There are no restrictions ong as its content is in
                                                                                                                                                                  DB 1;
.4e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                      6,
                                                                                                                                                                             Length
                                                                                                                                                                                                                       CRC64
                                                                                                                                                       Indels
                                                                                                                                                                                                                                                           FACTOR
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MBL outstation -
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RESULT BEF2_MONDO
ID FGF2_MONDO
ID FGF2_MONDO
ID FGF2_MONDO
ID FGF2
DO1-FEB
DT 01-FEB

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                                                                                                                                                                                                                                                                                                                                                                                                                                                 Growth factor; Mitogen; Angiogenesis; Heparin-binding.

PROPEP
1
9
BY SIMILARITY.
CHAIN
10
156
HEPARIN-BINDING GROWTH FACTOR
BINDING
28
32
HEPARIN (POTENTIAL).
BINDING
117
120
HEPARIN (POTENTIAL).
SEQUENCE
156
AA; 17303 MW; 7E655FCC49BF1209 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-94296558; PubMed-8024698;
Kusewitt D.F., Sabourin C.L.K., Sherburn T.E., Ley R.D.;
"Characterization of cDNA encoding basic fibroblast growth facto
the marsupial Monodelphis domestica.";
DNA Cell Biol. 13:549-554(1994).
-: FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC
IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES
VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CONCENTRATION OF THESE 2 GROWTH FACTORS.
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01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS: PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002209;
InterPro; IPR002348;
Pfam; PF00167; FGF; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Monodelphis domestica (Short-tailed grey opossum).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Metatheria; Didelphimorphia; Didelphidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; Z15154; CAA78854.1; HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-Eye;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=13616;
130
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                                                                                                                                                                                                                                                                                                                                             Local
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MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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RTGQYKLGSKTGPGQKAILFLPMSAKS
                                                                                               RGVVSIKGVCANRYLAMKEDGRLLALKYVTEECFFFERLESNNYNTYRSRKYSNWYVALK
                                                                                                                             RGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALK 119
                                                                                                                                                                                                                                                                                                                                                  Similarity
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                                                                                                                                                                                                                                                                                                                                             91.2%;
92.5%;
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                                                                                                                                                                                                                                                                                                                 Score ?17.5; DB 1;
Pred. No. 1.2e-67;
4; Mismatches 6;
                                               146
156
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             There are no
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Monodelphis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               growth factor
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FRESCHICT TO THE TREE STATES AND 
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Best Local
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PIR; A40117; A40117.

HSSP; P09038; 1BFF.

InterPro; IPR002209; HE

InterPro; IPR002348; II

Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                           BINDING
BINDING
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _XENLA STANDARD; PRT; 155 AA.

P12226;
01-OCT-1989 (Rel. 12, Created)
01-JAN-1990 (Rel. 13, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF).

FGF2 OR FGF-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                between the Swiss Institute of Bioinformatics and the Ethe European Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entitles requires a license agreement (See http://www.isborsend an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yenopus laevis (African clawed frog).
Xenopus laevis (African clawed frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            embryo."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        as a natural mesoderm induce Science 242:1053-1056(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kimelman D., Abraham J., Haaparante
"The presence of fibroblast growth
as a natural mesoderm inducer.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. MEDLINE-89058621; PubMed=3194757;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kimelman D., Kirschner M.; "Synergistic induction of mesoder identification of an mRNA coding
                                                                                                                                                                                                                                                                                                                                                                                                                  PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00247; Growth factor; Mi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART; SM00442; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; M18067; AAA49726.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-88052890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 95-155 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xenopodinae; Xen
NCBI_TaxID=8355;
                                                                                                                                                                              Local Sin
hes 121;
  70
                                          61
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                                                                                  GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
GVVSIKGITANRYLAMKEDGRLTSLRCITDECFFFERLEANNYNTYRSRKYSSWYVALKR
                                                                                                                                                                                                    Similarity
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27
116
111
155
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                                                                                                                                                                                                                                                                                                                   ; Mitogen; 9
1 9
10 155
27 31
16 119
11 111
                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GF; 1.
HBGF_FGF; 1.
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                                                                                                                                                                                               81.8%;
                                                                                                                                                                                                                                                                                              17241 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IL1_HBGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HBGF_FGF
                                                                                                                                                                                                                                                                                                                                                                                                                                  Angiogenesis; Heparin-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Haaparanta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mesoderm by coding for H
                                                                                                                                                                                                                                                                                           HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
MISSING (IN REF. 2).
W; 036735C8063142FD CR
                                                                                                                                                                            Score 644; DE
Pred. No. 5.4e
8; Mismatches
                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                        HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        factor
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FGF in th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Palisi T., Kirschner or in the frog egg: it
                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nd TGF-beta
the early )
                                                                                                                                                                                                                                                                                              CRC64
                                                                                                                                                                                                                       Length 155;
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                                                                                                                                                                              Indels
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RESULT 11
FGF1_HUMAN
ID FGF1_H
AC P05230
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Best Local
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Mesocri
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BINDING
BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-90270291; PubMed=1693366; Hall J.A., Harris M.A., Malark M., Man: "Characterization of the hamster DDT-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mesocricetus auratus (Golden hamster).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; E
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10036;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mesocricetus
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    FGF1_HUMAN
P05230; P0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HSSP; P05230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -:- SIMILARITY: BELONGS TO PIR; A60721; A60721.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -1- SUBUNIT: MONOMER.
-1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       130
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     its modulation by steroids.";
Cell. Biochem. 43:17-26(1990).
Cell. Biochem. 43:17-26(1990).
Cell. THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGE IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TY VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGQYKLGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               THAN DOES BFGF
                                                                                                                                                                                                                                                                                                                PPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANR 72
                                                                                                                            HYGQKAILFLPLPVSS
                                                                                                                                                                   GPGQKAILFLPMSAKS
                                                                                                                                                                                                           YLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYS--SWYVALKRTGQYKLGPKT 130
                                                                                                                                                                                                                                                                                             PPGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHIQLQLSAESAGEVYIKGTETGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SM00442; FGF;
E; PS00247; HBC
                                                                                                                                                                                                                                                                                                                                                                            Similarity
78; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    factor;
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    P07502;
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1 15 BY SIMILARITY
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                       STANDARD;
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17403
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28
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                                                                                                                                                                                                                                                                                                                                                                          Score 405; DB Pred. No. 3.8e 7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HEPARIN-BINDING GROWTH
HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
41E5EC760E412CC5 CRC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HEPARIN-BINDING
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DT-1 cell aFGF/HGBF-I gene and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    155
                         155
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                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
.8e-35;
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                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ANGIOGENIC
CELL TYPES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FACTORS
                                                                                                                                                                                                                                                                                                                                                                                                                       155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fibroblast
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IN
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MEDLINE=89343957; PubMed=2474753;
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Gospodarowicz D., Abraham J.A., Shipley G.D., Fiddes
"Structural analysis of the gene for human acidic fi
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e for human acidic fibroblast growth factor exons alternatively spliced to the first biophys. Res. Commun. 171:7-13(1990).
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175:1073-1080(1992).
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X "Solution structure of acidic fibroblast growth factor bound to 1,3

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EMBL; M60516; AAA51673.1;
EMBL; M23087; AAA52638.1;
EMBL; M23087; AAA52638.1;
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EMBL; X6779; CAA46661.1;
PIR; A23553; A23553.
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by non-profit institutions as long as its content
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an email to license@isb-sib.ch).
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Martin G.
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"Differentiating and mature neurons express the acidic fibroblast growth factor gene during chick neural development.";
Development 111:1143-1154(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
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Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
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Eukaryota; Metazoa; Chor
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HSSP; P05230; 2AXM.
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"Endothelial cell growth factors in
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SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY
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Pred. No. 7.6e-34;
1; Mismatches 38
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HEPARIN (POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                            MEDLINE-97128312; PubMed-8972905; Madial F., Hackshaw K.V., Chiu I. "Cloning and characterization of Gene 179:231-236(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                             Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.; "Isolation of cDNAs encoding four mouse FGF family members a characterization of their expression patterns during embryog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM SPECIES=Mouse;
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Mammalia; Eutheria; Rodentia;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
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                                                                                                                                                      <del>'</del>
                                                                                                                                                                                                                                                       "Characterization of the 1B promoter of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The nucleotide sequence
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                                                                       European Bioinformatics Institute. The by non-profit institutions as long ified and this statement is not removed.
                                                                                                                                                                                                                             its expression in the adult and developing siol. Chem. 271:30263-30271(1996).
                                                                                                                                                     SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
                                                                                                                                                                            FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIGGE IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TY VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                  SUBUNIT: MONOMER
                                                                                                               SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
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X14232;
M30641;
U36459;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RTGQYKLGPKTGPGQKAILFLPM
                                                   an email to license@isb-sib.ch).
                                                              requires
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; CAA32448.1; -.
; AAA37618.1; -.
; AAC52969.1; -.
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                                                             a license agreement (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed=2318343;
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                                                                                                                                                                                                                                                                                A., Hackshaw K.V.,
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Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
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ce of rat heparin
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Sciurognathi; Muridae;
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                                                                                                                                                                                                                                                                                                                                                          mouse
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In binding
                                                                                     There are no restrictions ong as its content is in
                                                                                                                                                                                                                                          fibroblast growth factor
eloping mouse brain.";
                                                                                                                                                                                                                                                                                 Evans J.E.,
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                                                                                                                                                                                                                                                                                                                                                         Fgf-1 gene.";
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E.;
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; Murinae; Mus
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RESULT 1
FGF1_PIG
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EMBL; U36458; AAC52999
EMBL; U67610; AAC52907
PIR; S04147; S04147.
PIR; D37360; D37360.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BINDING
BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-FEB-1991 (Rel. 17, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Alpha-endothelial cell growth factor)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGF1_PIG
P20002;
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CHAIN
                                                                                                                                                                                                                                                                       growth
                                                                                                                                                                                                                                                                                                                                                                                                                                         Sus scrofa (Pig).
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP; P05230; 1RML.
MGD; MGI:95515; Fgf1.
                                                                              canine hearts.";
Eur. J. Biochem.
                                                                                                                                             Quinkler W., Maasberg M.
Sharma H.S., Schaper W.;
                                                                                                                                                                                                                                                                     MEDLINE-92062117; PubMed-1719973;
Schmidt M., Sharma H.S., Schott R.J., Schaper v
"Amplification and sequencing of mRNA encoding
growth factor (aFGF) from porcine heart.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Growth
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                                                                                                                                                                                  MEDLINE-89231704;
                                                                                                                                                                                                                                                      Biochem.
                                                                                                                                                                                                                                                                                                                                                          TISSUE=Heart;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FGF1 OR FGF-1
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                                                                                                                       "Isolation of heparin-binding
                                                                                                                                                                                                          SEQUENCE OF 22-41.
                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9823;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Fragment)
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Local Similarity
Conserv
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. J. Biochem. 181:67-73(1989).

FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIGGENIC FUNCTION AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VIVO AND ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
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U36458; AAC52969.1;
U67610; AAC52907.1;
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E; PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            factor; Mitogen; Angiogenesis; Heparin-binding
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PD000831; HBGF_FGF; 1.
                                                                                                                                                                                                                                                 Biophys.
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113
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155
28
116
17418
                                                                                                                                                                                                                                               Res.
                                                                                                                                                                                    PubMed=2714282;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata; Craniata; Vertebrata; Cetartiodactyla; Suina; Suidae;
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                                                                                                                                                                   Bernotat-Danielowski
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18;
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Pred. NO. 1.1e
18; Mismatches
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HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
; 8880E4FF0FBA4161 CRC64;
                                                                                                                          growth
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No. 1.1e-33;
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                                                                                                                            factors
                                                                                                                                                                                                                                                                                                                 Schaper W.;
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                                                                                                                          bovine,
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Sus.
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RESULT RESULT PROFILE 
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Best Local
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BINDING
CONFLICT
CONFLICT
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                       23-OCT-1986 (Rel. 02,
01-MAR-1989 (Rel. 10,
01-MAR-2002 (Rel. 41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
CHAIN
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                                                                                                                                                                                                                                      Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Prostatropin) (Endothelial cell growth factor beta and alpha chains) (Acidic eye-derived growth factor II) (EDGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             - -
  MEDLINE=89083506; Halley C., Courto:
                                                                                                                                       Bos taurus (Bovine).
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                             P03968;
                                                                                                                                                                                                                                                                                                                                                                              FGF1_BOVIN
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Pfam; PF00167; FGF; 1.
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HSSP; P05230; 2AXM.
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                                         TISSUE=Retina
                                                           SEQUENCE
                                                                                                NCBI_TaxID=9913;
                                                                                                                       Mammalia;
Bovidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROPEP
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SUBUNIT: MONOMER.
MISCELLANEOUS: THIS PROTE
THAN DOES BFGF.
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                                                                                                                                                                                                 OR FGF-1 OR FGFA OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HYGQKAILFLPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GPGQKAILFLPM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PPGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHIQLQLSAESVGEVYIKSTETGQ
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is Y., Laurent M.;
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sequence
Science 2
[6]
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Sharma H.S., Schaper W.;
"Isolation of heparin-binding growth
canine hearts.";
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MEDLINE=89231704;
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[7]
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Gimenez-Gallego G., Ro
Disalvo J., Thomas K.;
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                                                                                                                  Philippe J.M., Renaud Submitted (JUL-1992) t
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MEDLINE=86261806; PubMed=2425435;
Abraham J.A., Mergia A., Whang J.L., Tumolo
Hjerrild K.A., Gospodarowicz D., Fiddes J.C.
                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 16-44,
MEDLINE=86055750; F
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                                      Science 251:90-93(1991)
                                                                                                X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                  protein, basic fibroblast
Science 233:545-548(1986)
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MEDLINE-87026586;
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                                                                                                                                                                                                                                          "Nucleotide sequence of a bovine clone encoding protein, basic fibroblast growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                   "Brain-derived acidic fibroblast growth factor: complete amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-87016918;
                                                          "Three-dimensional
FUNCTION: THE HEPARIN-BINDING GR
IN VIVO AND ARE POTENT MITOGENE
VITRO. THERE ARE DIFFERENCES IN
CONCENTRATION OF THESE 2 GROWTH
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J.M., Renaud F., De
d (JUL-1992) to the
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ne EMBL/GenBank/DDBJ
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European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in ified and this statement is not removed. Usage by and for contents are not removed.
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an email to license@isb-sib.ch).
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                    license agreement (See http://www.isb-sib.ch/announce/
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EMBL; M97661; AAA30564.1; -.
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SUMMARIES

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ALIGNMENTS

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SMART; SMOU442; EGE; 1.); PD000831; HBC	PRINTS; PR00262; IL1HBGF.	F00167; FGF;	InterPro; IPR002348; IL1_HBGF.	InterPro; IPR002209; HBGF_FGF.	P09038;	AAD13853.1;	4513; AAA52532.1;		granulosa and cumulus cells from in vitro fertilisation patients.";	expression of basic fibroblast growth factor transcripts in human	TIOMAS E.C.		MEDLINE=93038590; PubMed=1417798;	SEQUENCE OF 81-168 FROM N.A.	[2]	Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989).	odons.";	fibroblast growth factor are	., Chalon P., Tauber J.P., Amalric F., Smith	Prats H., Kaqhad M., Prats A.C., Klaqsbrun M., Lelias J.M.,	8918452	SEQUENCE FROM N.A.	[1]	D=9606;	Primates; Catarrhini; Hominidae;		Homo sapiens (Human).		C FIBROBLAST GROW	(TremBirel. 17, Last annotation	03,	(TrEMBLrel		P78443 PRELIMINARY: PRT: 196 AA.	LT 1 43

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RESULT
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ID Q7
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Best Local S
Matches 144
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SEQUENCE
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"Multiple novel variants of fibroblast growth
expressed in mouse embryos.";

Submitted (FEB-2001) to the EMBL/GenBank/DDBJ
EMBL; AY027551; AAK52308.1;

SEQUENCE 153 AA; 17024 MW; AD8163CD8FA2FAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q925A3
Q925A3;
 01-NOV-1996 (TrEMBLrel. 01, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-UN-2001 (TrEMBLrel. 17, Last annotation update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
FIBROBLAST GROWTH FACTOR 2 (FGF-2) (FIBROBLAST GROWTH FACTOR, BASIC)
(BFGF) (HEPARIN-BINDING GROWTH FACTOR 2) (HBGF-2) (PROSTATROPIN)
(PROSTATIC GROWTH FACTOR) (FRAGMENTS).
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10090;
                                                                                                                Q60487;
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                                                                                                                                                                                                                                TGQYKLGPKTGPGQKAILFLPMSAKS 146
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                                                                                                                                                                                                                                                                                                GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
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                                                                                                                                                                                                                                                                                                                                                             PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
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144; Conser
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196 AA; 21203 MW;
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nilarity 98.6%;
Conservative
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95.98;
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Pred. No. 3.8e
3; Mismatches
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Pred. No. 4.6e-77;
1; Mismatches 1
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Sciurognathi; Muridae
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ProDom; PD000831; HBGF_FGF;
SMART; SM00442; FGF; 1.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                                                                Growth factor; Mitogen;
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-!- PTM: THE N-TERMINAL OF ISOFORM 18 KDA IS
-!- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
-!- CAUTION: THIS IS A CONCEPTUAL TRANSLATION; MANY FRAMESHIFTS WERE INTRODUCED FROM RESIDUES 77, 88, 93 AND 149 DOWNWARD TO EXTEND TH SIMILARITY TO THE HUMAN SEQUENCE AS WELL AS ON THE BASIS OF PARTIAL AMINO-ACID SEQUENCING.
EMBL; L75974; AAA85394.1; ALT_FRAME.
HSSP; P09038; 1BLA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: WIDE-SPECTRUM MITOGENIC, AND NEUROTROPHIC FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC PACCTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC PACCTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC PACCTOR. IMPLICATED IN ANGIGGENESIS, WOUND HEALING, AND TUMOR GROWTH. POTTENT MITOGEN AND CHEMOATTERACTANT FOR MESENCHYME-DERLYED CELLS. IMPLICATED IN THE DIFFERENTIATION, PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL MERVOUS SYSTEM AND IN BONE FORMATION. MAJOR ANGIGGENIC FACTOR THAT ALSO ACTIVATES THORR MEGOVASCULARIZATION (BY SIMILARITY).

1- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGER1 AND AT LEAST ONE HEPARAN SULFATE (BY SIMILARITY).

1- ALTERNATIVE PRODUCTS: AT LEAST TWO ISOFORMS; 18 KDA AND 25 KDA (SHOWN HERE); MAY BE PRODUCED BY USE OF ALTERNATIVE TRANSLATION INTELLIBED. BOTH FORMS ARE ACTIVE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Moscatelli D., Joseph-Silverstein J., Manejias R., "Mr 25,000 heparin-binding protein from guinea pig molecular weight form of basic fibroblast growth fiproc. Natl. Acad. Sci. U.S.A. 84:5778-5782(1987)
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"An amino-terminally extended and post-translationally of a 25kD basic fibroblast growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=87289686; PubMed=3475702;
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PubMed=1713785;
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HEPARIN
HEPARIN
                                                    CELL
                                                                                                                                                                 25 KDA
18 KDA
FOR 18
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                                                    ATTACHMENT SITE
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(BY
SIMILARITY).
SIMILARITY).
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high
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"The role bpgf in canine Hemangiosarcoma.";

RI Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.

CC --- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROTROPHIC CC PACTOR. IMPLICATED IN A MULTIFUED OF PHYSIOLOGIC AND PATHOLOGIC CC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND CC PROLIFERATION, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOATTRACTANT FOR MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERNTIATION, CC PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO CC SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO CC --- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGERI AND AT LEAST CC --- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGERI AND AT LEAST CC --- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY. DR HSSP; P09038; 1BFF.

InterPro: TDP0000000
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                SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-NOV-1998 (TrEMBLrel. 17, Last annotation update)
01-UIN-2001 (TrEMBLrel. 17, Last annotation update)
BASIC FIBROBLAST GROWTH FACTOR (BFGF) (FGF-2) (HEPARIN-BINDING GROWTH FACTOR 2) (HBGF-2) (PROSTATROPIN) (PROSTATIC GROWTH FACTOR)
                                                                   SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
Growth factor; Mitogen; Vascularization;
                                                        Phosphorylation;
                                                                                                  SMART:
                                                                                                                                         InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
    BINDING
                                                                                                                 ProDom;
                                                                                                                              PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BFGF
                                             NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 145
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Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGQYKLGPKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PALPEGGDGGAFAPGHFKDP-----NGGFFLRIHPDGRVDGVREKTDPHIKLQLQAEDR 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGQYKLGSKTGPGQKAILFLPMSAKS
                                                                                                                PR00262; IL1HBGF.
PD000831; HBGF_FC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
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4
6
8
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88
136
170 ;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
  1
21
63
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; Developmental p
1 CEI
23 CEI
65 CEI
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4

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88

136

18354
                                                                                                     HBGF_FGF;
GF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88.8%;
91.1%;
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METHYLATION (MONO- OR DI-).

METHYLATION (MONO- OR DI-).

METHYLATION (MONO- OR DI-).

PHOSPHORYLATION (BY SIMILARITY).

PHOSPHORYLATION (BY SIMILARITY).

PHOSPHORYLATION (BY SIMILARITY).

F36BDBC736E5FEBE CRC64;
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CELL ATTACHMENT SITE (POTENTIAL).
CELL ATTACHMENT SITE (POTENTIAL).
HEPARIN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 699; DB 11;
Pred. No. 1.1e-68;
2; Mismatches 5;
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                                                        protein.
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                                                                      Heparin-binding
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Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6;
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Q9BDX1
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Best Local s
Matches 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
  Q9BDX1;
01-JUN-2001 (Trem
01-JUN-2001 (Trem
01-DEC-2001 (Trem
BASIC FIBROBLAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BINDING
BINDING
MOD_RES
MOD_RES
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases EMBL; AB064664; BAB63249.1; -. SEQUENCE 155 AA; 17278 MW; 2B583058538AB8D9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-DEC-2001 (TremBLrel. 19, 01-DEC-2001 (TremBLrel. 19, 01-DEC-2001 (TremBLrel. 19, FIBROBLAST GROWTH FACTOR-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q90Y92
Q90Y92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Susaki K., Nakamura "Expression of FGF2 regeneration.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cynops pyrrhogaster (Japanese common newt).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FIBROBLAST
FGF-2.
                                                                                                      Q9врх1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=8330;
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                                                                                                                                                                                                                                             121
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nes 129; Conser
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                                                                                                                                                                                                                                                                                  TGQYKLGPKTGPGQKAILFLPMSAKS 146
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANRYLAM 76
                                                                                                                                                                                                       TGQYKNGSKTGAGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                                                                                                                  PALPEDGNGGTFTPGGFKEPKRLYCKNGGFFLRINSDGKVDGAREKSDSYIKLQLQAEER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
    (TrEMBLrel.
(TrEMBLrel.
(TrEMBLrel.
)BLAST GROWTH
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103
48
96
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                                                                                                        PRELIMINARY;
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99.2%;
17, Created)
17, Last sequence update)
19, Last annotation update
FACTOR (FRAGMENT).
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Last annotation update)
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Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 665; DB 1
Pred. No. 5e-65;
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HEPARIN (BY SIMILARITY).
HEPARIN (BY SIMILARITY).
PHOSPHORYLATION (BY SIMI
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                                                                                                        PRT;
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                                                                                                      111
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ches 0;
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                       update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
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Best Local S
Matches 109
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Q9NIS7;
Q9NIS7;
Q9NIS7;
Q9NIS7;
Q1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
Q1-DCC-2001 (TrEMBLrel. 19, Last annotation update)
Q1-DEC-2001 (TREMBLE) (FRAGMENT).
                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chon
Mammalia; Eutheria; Ceta
Cervidae; Odocoileinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pulmonary Hypertension.";
Submitted (MAR-2000) to the
EMBL; AF251270; AAK37962.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sekhon H.S., Keller J.K., Spindel E.R.;
"Alterations in Collagen and Elastin Gene Expression in F
Pulmonary Vessels in Monkeys Following Prenatal Nicotine
Possible Role of alpha7 Nicotinic Acetylcholine Receptor
                                                                                                                                                                                                                                                                      Capreolus capreolus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART; SM00442; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00167; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Macaca mulatta (Rhesus macaque).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
Cercopithecinae; Macaca.
                                                                                                               capreolus).";
Anim. Reprod. Sci. 64:65-75(2000).
EMBL; AF152587; AAF73226.1; -.
                                                                                                                                                 TISSUB-TESTIS;
MEDLINE-20532861; PubMed-11078967;
Wagener A., Blottner S., Goritz F.,
"Detection of growth factors in the
                                                                                                                                                                                                                                                                                                                                                        Q9N1S7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00262; IL1HBGF ProDom; PD000831; HBGF_FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP; P09038; 2FGF
                                 ProDom; PD000831; HBGF_FGF; SMART; SM00442; FGF; 1.
                                                         PRINTS; PR00262; IL1HBGF.
                                                                  InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00247; HBGF_FGF;
          NON_TER
                        PROSITE;
                                                                                                       HSSP; P09038; 4FGF.
                                                                                                                                                                                                  EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                 61
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                                                                                                                                                                                                                                                                                                                                                                                                                           FFERLESNNYNTYRSRKYSSWYVALKRTGQYKLGPKTGPGQKAILFLPMSA 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        al Similarity
109; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FROM N.A.
                     PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111 AA;
                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
 108
                                                                                                                                                                                                                                               (Roe deer).
Chordata; Craniat
Cetartiodactyla;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12633 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                     Capreolus.
                                                                                                                                                                                                                                               deer).
data; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>.</u>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 576; DB Pred. No. 1.8e 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EC0967A5261F5487 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             owing Prenatal
Acetylcholine
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Q925A1;
01-DEC-2001
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FIBROBLAST G
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRINTS; PR00262; IL1HBGF-FCProDom; PD000831; HBGF-FCSMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF-FC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q98TD8;
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InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=8330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mizuno N., Hayashi T., Kondoh H., (
"Cynops fibroblast growth factor-2
                                                                                                                                                                                                                                         122
                                                                                                                                                                                                                                                                                    143
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                                                                                                                                                                                                                                                                                                                                                                        LASKCYTDECFFFERLESNNYNTYRSRKYSSWYVALKRTGQYKLGPKTGPGQKAILFLPM 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FFFERLESNNYNTYRSRKYSSWYVALKRTGQYKLGPKTGPGQKAILFL 108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           108;
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al Similarity 100.0%;
108; Conservative
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                                        (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
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                                                                                                                                 PRELIMINARY;
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87.1%;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. 3.4e-54;
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Matches 94
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01-DEC-2001 (TrEMBLrel. 19, C)
01-DEC-2001 (TrEMBLrel. 19, L)
01-DEC-2001 (TrEMBLrel. 19, L)
01-DEC-2001 (TrEMBLR). 19, L
Q07659 PRELIMINARY;
Q07659;
O1-NOV-1996 (TrEMBLrel. 01, C
O1-NOV-1996 (TrEMBLrel. 01, L
O1-JUN-2001 (TrEMBLrel. 17, L
FIBROBLAST GROWTH FACTOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-FVB/N;
Dirks R.P., Griep A.E.;
"Multiple novel variants of fibroblast growth
expressed in mouse embryos.";
Submitted (FEB-2001) to the EMBL/GenBank/DDBJ
EMBL; AY027557; AAK52309.1; -.
SEQUENCE 112 AA; 12725 MW; B00557ABB0257CC
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Submitted (PEB-2001) to the EMBL/GenBank/DDBJ EMBL; AY027558; AAK52310.1; -.
SEQUENCE 109 AA; 12388 MW; 61074ADE3303C86
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
MCBI_TaxID=10090;
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Mammalia; Eutheria;
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93; Conserve
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94; Conser
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Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                          61.5%;
97.9%;
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1; Mismatches
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Sciurognathi; Muridae;
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Sciurognathi; Muridae;
                                                                                                   PRT;
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.8e-46;
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.2e-45;
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; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
; Murinae; Mus
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Best Local S
Matches 98
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P79706;
01-MAY-1997 (TrEMBLrel. 03, C
01-MAY-1997 (TrEMBLrel. 03, L
01-DEC-2001 (TrEMBLrel. 19, L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prodom; PD000831; HBGF_FGF;
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF;
SEQUENCE 146 AA; 16182 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=93246053; PubMed=7683281;
Borja A.Z., Zeller R., Meijers C.;
"Expression of alternatively spliced bFGF
antisense mRNAs during chicken embryogenes
Dev. Biol. 157:110-118(1993).
          EMBL; D89443; HSSP; P09038;
                               "Serial expression of the early Cynops gastrula."; submitted (NOV-1996) to the
                                                                Suzuki A.S.,
Kaneda T.;
                                                                                                                                Cynops pyrrhogaster (Japanese
Eukaryota; Metazoa; Chordata;
Amphibia; Batrachia; Caudata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Development 109:387-393(1990).
EMBL; M95706; AAA48616.1; -.
EMBL; X56804; CPA40139.1; -.
HSSP; P09038; 2BFH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BFGF
                                                                                      TISSUE-EMBRYO;
                                                                                               SEQUENCE FROM N.A.
                                                                                                                     NCBI_TaxID=8330;
                                                                                                                                                                  BASIC FGF (FRAGMENT).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Fibroblast growth
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                                                                                                                                                                                                                                                                              TGQYKPGPKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                                                                                                                                          TGQYKLGPKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                                                                                                                                                                                                                    PSLSPDGGV-
                                                                                                                                                                                                                                                                                                                                                                                                             98; Conservative
 IPR002209;
     3; BAA13958.1; -.; 4FGF.
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67.1%;
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Last seq
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                                EMBL/GenBank/DDBJ databases
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Pred. No. 9.7e
7; Mismatches
                                                                                                                                common newt).
Craniata; Vertebrata; Euteleos:
Salamandroidea; Salamandridae;
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embryogenesis.";
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annotation
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RESULT
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Best Local Similarity
Matches 65; Conserv
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ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
NON_TER 1
NON_TER 76 76
SEQUENCE 76 AA; 8796 MW; 7D9
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Pfam; PF00167; FGF; 1.
PRINTS; PR00262; IL1HBGF.
PrODom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
                                                                                                                                                                                                                                   Submitted (MAR-2000) to the EMBL/GenBank/DDBJ EMBL; AF250027; AAF65566.1; -
HSSP; P09038; 4FGF.
InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                         Ovis aries (Sheep).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
BASIC FIBROBLAST GROWTH FACTOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
TISSUE-FETAL PLACENTAL ARTERY;
                                                                                                                                                                                                                                                                                                                                                                           Bovidae; Caprinae; Ovis.
NCBI_TaxID=9940;
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"Growth factor expression
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANRYLAMKED 79
SRKYS
                       SRKYS 112
                                              DPHIKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYR
                                                           DPHIKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYR 107
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89; Conserv
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65
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88.1%;
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. 4.9e-30;
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SEQUENCE
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9N1S8; O1-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
ACIDIC FIBROBLAST GROWTH FACTOR (FRAGMENT).

AFGF.
Capreolus capreolus (Noe deer).
                                                                                                                                                          Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                               BASIC FIBROBLAST GROWTH FGF-2 OR FGF2.
                                                                                                                                                                                                                      01-JAN-1998 (TrEMBLrel.
01-JAN-1999 (TrEMBLrel.
01-JUN-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProDom; PD000831; HBGF_FGF;
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Anim. Reprod. Sci. 64:65-75(2000).
EMBL; AF152586; AAF73225.1; -.
HSSP; P05230; 2AFG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wagener A., Blottner S., Goritz "Detection of growth factors in capreolus).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Capreolus capreolus (Roe deer).
Eukaryota; Metazoa; Chordata; Craniata;
Mammalia; Eutheria; Cetartiodactyla; Run
Cervidae; Odocoileinae; Capreolus.
                                                         Handschug K., Glaeser C.;
"Polymorphism in the 5' untranslated region of the FGF-2 transition (79 bp upstream of the first CTG codon).";
Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                           000527;
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InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. TISSUE-TESTIS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9858;
Handschug K.,
"Mutations in
                                                                                                                          SEQUENCE FROM
                                                                                                                                                                                   Homo sapiens (Human).
                                      SEQUENCE FROM
                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRINTS; PR00262; IL1HBGF
                         TISSUE=BLOOD;
                                                                                                           TISSUE-BLOOD;
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106 AA;
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09, Last sequence update)
17, Last annotation update)
FACTOR (FRAGMENT).
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Pred. No. 3e-25;
6; Mismatches
              Glaeser C.;
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cora; Cervoidea;
  gene:
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RT G to A on position 19 and transversion G to C on position 97.";

RL Submitted (NOV-1999) to the EMBL/GenBank/DDBJ databases.

DR EMBL; Y13468; CAA73868.1; -.

DR EMBL; Y13468; CAA73868.1; -.

DR HSSP; P09038; 1BFF.

DR InterPro; IPRO02209; HBGF_FGF.

DR ProDom; P0000831; HBGF_FGF; 1.

PT NON_TER 114 114

SQ SEQUENCE 114 AA; 11688 MW; 98DC6381C1960C1D CRC64;

Query Match
Best Local Similarity 100.0%; Pred. No. 8.7e-24;

Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPH 10

Db 65 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPH 114

Search completed: June 7, 2002, 14:46:13
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Result
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Maximum DB seq length: 200000000
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1: /SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1980.DAT:*
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3: /SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1982.DAT:*
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Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PALPEDGGSGAFPPGHFKDP......GSKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                                                                              by analysis of the total
                                                                                                                                                              Length
146
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5 (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                              DB
                                                                                                                                   9
                                                                                                      AAP82579
B AAR25423
L AAY87847
                                                                                                                                                              ID
            AAP70301
                                     AAR22233
AAR71414
AAR71413
                                                                            AAE11974
AAG62612
                        AAR89473
                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                               score distribution
                     Human FGF-2 protei
Human fibroblast g
Human basic insuli
bFGF truncated at
Human basic fibrob
Human basic fibrob
Human basic fibrob
                                                                                                                   Human basic fibrob bFGF derivative.
                                                                                                                                                           Description
           Sequence
                                                                                                      Human FGF-2
           of human
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Leaderless protein	AAW31664	18	158	100.0	785	45
ce of h	AAP71085	œ	157	100.0	785	44
n basic fik	AAB50274	22	155	•	785	43
Ø	AAB61662	22	- 155	•	785	42
	AAY72909	22	155	•	785	41
acid se	AAB84597	22	155	100.0	785	40
ത	AAG64847	22	155		785	
	AAG64317	22	155		785	
∙On	AAB99918	22	155	100.0	785	
-	AAB85813	22	155	100.0	785	36
fibroblast	AAE11976	22	155	•	785	
fibroblast	AAG65648	22	155	•	785	
fibrob	AAY32334	21	155		785	
	AAY90448	21	155	•	785	
(bFGF), SEQ	AAY90411	21	155	•	785	
fibroblast	AAY96893	21	155	•	785	
fibroblast	AAY96885	21	155	•	785	
	AAY96873	21	155		785	
	AAB10298	21	155		785	
	AAW99380	20	155	100.0	785	
Fibroblast growth	AAW53023	19	155	•	785	
	AAW71379	19	155	•	785	
	AAW71386	19	155	•	785	
Fibroblast growth	AAW75712	19	155		785	
Fibronectin recept	AAY05456	19	155	100.0	785	
~	AAW19595	18	155		785	
fibron	AAW33338	18	155	100.0	785	
0	AAR70823	16	155	•	785	
•	AAR70204	16	155		785	
blast grow	AAR80777	16	155		785	16
5 hbFG	AAR53270	15	155	00.	785	
_	AAR40159	14	155	00.	785	14
truncat	N	13	155		785	13
Human basic fibrob	AAR05314	11	155	100.0	785	12

ALIGNMENTS

AAP82579 ID AAP8

AAP82579 standard; protein;

146

Basic fibroblast growth factor; anticancer agent; bFGF

Human basic fibroblast growth factor.

02-NOV-1990

(first entry)

AAP82579;

RESULT

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03-MAR-1987; 26-AUG-1987; 26-JAN-1988; WPI; 1988-308739/44. N-PSDB; AAN82192. 01-MAR-1988; EP288687-A. New monoclonal antibodies specific for basic fibroblast growth Iwane M, 02-NOV-1988 Homo sapiens factor - used in immunoassay, purificn. and as anticancer agent (TAKE) TAKEDA CHEMICAL IND KK. Kurokawa T, 87JP-0049759. 87JP-0211599. 88JP-0016260. 88EP-0103047. Igarashi K;

AAP94038

Human

basic fibrob

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English.

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                                                                                                                                                                                                                                                                                                                                                                                                               ID
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Best Local :
                     Derived basic fibroblast growth factor - for treating ulcers, regenerating damaged neural tissue, aiding tissue transplant bone graft and revascularising ischaemic tissue
Claim 2; Page 3;
                                                                WPI; 1992-235730/29.
                                                                                     Bertolero F,
                                                                                                                              09-JAN-1991;
                                                                                                                                                  09-JAN-1992;
                                                                                                                                                                                                                                   Modified-site
                                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                   revascularise; regenerate; neural tissue;.
                                                                                                                                                                                                                                                                                                                               Human;
                                                                                                                                                                                                                                                                                                                                                   bFGF derivative
                                                                                                                                                                                                                                                                                                                                                                       06-JAN-1993
                                                                                                                                                                                                                                                                                                                                                                                           AAR25423
                                                                                                                                                                                                                                                                                                                                                                                                               AAR25423 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               wounds and, due to its neovascularising action, and arteriosclerosis.
See also AAN82193 and AAN82194.
                                                                                                       (FARM ) FARMITALIA ERBA SRL CARLO
                                                                                                                                                                      15-JUL-1992.
                                                                                                                                                                                           EP494664-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            146;
                                                                                                                                                                                                                                                                                                                              basic fibroblast growth factor; recombinant; wound healing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              146 AA;
                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                     Caccia P,
                                                                                                                              91GB-0000381
                                                                                                                                                  92EP-0100257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein was isolated from a cDNA library prepd
juman foreskin derived primary culture cell. It
produce recombinant hbFGF for prodn. of MAbs
3F (do not cross react with acidic FGF). High
also useful for promoting healing of burns and
                                                                                                                                                                                                                                                                  Location/Qualifiers 69
                                                                                                                                                                                                                                   89
                                                                                                                                                                                                               /note= "derivatised with an agent capable of
forming a covalent S-C bond with Cys"
  20pp; English
                                                                                                                                                                                                                                                       'note- "derivatised
                                                                                                                                                                                                                                            covalent
                                                                                                                                                                                                                                                                                                                                                                                                               protein; 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                     Cauet G,
                                                                                                                                                                                                                                             S-C bond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 785; DB 9; Pred. No. 1.5e-75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                     Nitti G;
                                                                                                                                                                                                                                            with an agent capable of forming with \operatorname{Cys}^n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to treat thrombosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 146;
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The sequence is that of a recombinant human basic fibroblast growth factor which has at least on of the four cysteine residues (pref. Cys 69 and Cys 87) derivatised with an agent able to form a covalent s-C bond with Cys. Typical agents include iodoacetic acid, haloacetamide, alkali tetrathionates, alkyl methanethiosulphones and 1-6C alkylsulphones. The derivatised bFGF is used to accelerate the healing of wounds (including burns, ulcers, transplants, and bone grafts), to revascularise ischaemic tissue or to regenerate damaged neural tissue. Compared with native bFGF the recombinant derivatised bFGF has better biological activity and stability (esp. not aggragating by dimer formation) and is also easier to isolate.
                                                                                               Novel unit dose comprising fibroblast growth factor, its angiogenically active fragment or mutein for inducing cardiac angiogenesis, treating coronary artery disease and reducing post myocardial infarction injury
                                                                                                                                                          WPI; 2000-317840/27
                                                                                                                                                                                     Kavanaugh WM;
                                                                                                                                                                                                                                                           13-OCT-1998;
                                                                                                                                                                                                                                                                                                                                               WO200021548-A2
                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                    FGF-2; fibroblast growth factor; cardiant; treatment; angiogenesis;
coronary artery disease; myocardial infarction injury; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Human FGF-2 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY87847;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY87847 standard; protein; 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                (CHIR ) CHIRON CORP.
(WHIT/) WHITEHOUSE M J.
                                                                                                                                                                                                                                                                                      13-OCT-1999;
                                                                                                                                                                                                                                                                                                                  20-APR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             146;
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                                                                                                                                                                                                                                                             98US-0104103
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Pred. No. 1.5e-75;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 146;
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This invention describes a novel unit dose (I), of fibroblast growth factor (FGF) comprising 0.008-6.1 mg of a mammalian FGF comprising sequence of 140 ((II) and (III)), 146 ((IV) and (V)), 205 (VI), 266

Claim 1; Page 56-57;

67pp;

English.

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RESULT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (VII), 20 given in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intervention and results in an superior increase in the treated patients's exercise tolerance time (ETT). It also provides a safe and therapeutically efficacious treatment for the patients with coronary artery disease that lasts at least 6 months before a further treatment is needed. The method provides superior increase of 1.5-2 minutes in the treated patient's (ETT), compared to an increase of 30 seconds for current modes treatment. This sequence represents the human FGF-2 protes fragment described in the method of the invention.
Treating or preventing erectile dysfunction, c growth factor, particularly fibroblast growth in the penis, groin or leg -
                                                                                                                                                                                                                      09-MAR-2001;
                                                                                                                                                                                                                                                     20-SEP-2001
                                                                                                                                                                                                                                                                                                                                                         Human; therapy; erectile dysfunction; fibroblast growth factor-2; epidermal growth factor; EGF; platelet derived growth factor; PDGF vascular endothelial growth factor; VEGF; tissue growth factor; TG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAE11974;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE11974 standard; Protein;
                                                                                                                                          (CHIR ) CHIRON
                                                                                                                                                                         10-MAR-2000;
11-MAY-2000;
                                                                                                                                                                                                                                                                                    WO200168125-A2
                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                              impotence; vasotropic.
                                                                                                                                                                                                                                                                                                                                                                                                                          Human
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
                                                                2001-616273/71.
DB; AAD19521.
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                                                                                                                                                                                                                                                                                                                                                                                                                        fibroblast growth
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                         2000US-188480P
2000US-203415P
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                                                                                                                                            CORP
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                                                                                                                                                                                                                                                                                                                                                                                                                          factor-2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           215 (IX), and 208 (X) amino acids (aa),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
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                                                                                                                                                                                                                                                                                                                                                                                                                        (FGF-2) #1.
                              comprises administering
                   factor to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
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                   blood vessels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                146;
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      The present invention describes a method of preventing or treating neuronal damage following a central nervous system insult, involving modulating the cerebral temperature and administering a neurologic therapeutic agent. The agent may be a growth factor, such as fibroble growth factor (FGF), The method is growth factor (FGF) or insulin-like growth factor (FGF). The method is growth factor (FGF) or insulin-like growth factor (FGF).
                                                                                                     Preventing or treating neuronal damage of the central nervous system, comprises modulating the cerebral temperature and administering a neurological therapeutic agent \, -
                                                                                                                                                       WPI;
                                                                                                                                                                                                                                                                             31-MAY-2001
                                                                                                                                                                                                                                                                                                                                                              Human; insulin-like growth factor 1; IGF-1;
central nervous system insult; hypothermia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAG62612 standard; protein; 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            factor (FGF), epidermal growth factor (EGF), platelet derived growt factor (PDGF), vascular endothelial growth factor (VEGF) or tissue growth factor (TGF). The invention is used to treat or prevent erec dysfunction, or impotence. The present sequence is a human FGF-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The
                                                                                 Disclosure;
                                                                                                                                                                               Gluckman PD,
                                                                                                                                                                                                                              27-OCT-1999;
                                                                                                                                                                                                                                                     26-OCT-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                   Human
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                                                                                                                                                                                                      (CHIR ) CHIRON CORP
                                                                                                                                                                                                                                                                                                                                                    ischaemia cerebrovascular
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                                                                                                                                                                                                                                                                                                                                                                                                   basic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dysfunction,
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                                                                              Page
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ilarity 100.0%;
Conservative (
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comprising administering a fibroblast
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                                                                               41pp;
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Pred. No. 1.5e-75;
Mismatches 0;
                                                                               English.
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neuroprotective;
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        as fibroblast
The method is
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RESULT
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Best Local
The peptide sequence was deduced from the synthetic DNA sequence prepd. as described in EP-363675. E. coli cells transformed with the synthetic DNA were lysed and the supernatent purified, giving a 50:50 mixture of a 154 residue bFGF (2-155) having the amino acid sequence of the 155 residue form (Abraham et al., Science, 233, 545-548, 1986) but without the N-terminal Met; and a 153 residue bFGF (3-155). An adduct of bFGF formed with heparin or heperan sulphate contg. the bFGF 9-10 Leu-Pro bond can be cleaved with pepsin A or cathepsin D to cleave this bond and release a peptide with the N-terminus be deleted up to and including residue 9, sequentially, giving a protein of X-bFGF(9-155), where X is any peptide from regidues 1-9 of bFGF sequentially. This cleavage method can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               disease.
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                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic
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                                                                                                                                                     Claim 3; Page 27; 36pp; English.
                                                                                                                                                                                                                                                                                         02-AUG-1990;
                                                                                                                                                                                                                                                                                                                30-JUL-1991;
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                                                                                                                                                                                                                                                                                                                                                                                             Peptide
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                                                                                                                                                                                     heparin or heparan
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A; cathepsin D; v
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                                                                                                                                                                                                                                                                                         90GB-0017008
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                                                                                                                                                                                     fibroblast growth factor ran sulphate and cleaning
                                                                                                                                                                                                                                                                                                                                                                                  /note-
                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      its N-terminus
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                                                                                                                                                                                                                                                                   ERBA SRL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                    h factor; adduct; heparin; heperan sulphate; wounds; burns.
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                                                                                                                                                                                                                                                                                                                                                                                  residues 1-8
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Pred. No. 1.5e-75;
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                                                                                                                                                                                     forming adduct with pepsin A or
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RESULT
AAR71414
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The prod. can be u
See also AAR22232.
                                      This is a basic fibroblast growth factor (bFGF) of human origin. It is used in a compsn. to treat periodontal disease. The compsn. promotes regeneration ne-attachment of the bone of the tooth socket, the periodontal membrane and the cementum and regeneration of dentine. The bFGF may be prepd. by recombinant methods, and is pref. formulated in a gel for application to the affected area.
                                                                                                                                                                                                                                                                                                                                 basic
                                                                                                                                                                                                                                                                                                                                                  Human basic fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                      AAR71414;
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                                                                                                                        dentine regeneration
                                                                                                                                                                                                                                                             02-MAR-1995
                                                                                                                                                                                                                                                                             W09505840-A
                                                                                                                                                                                                                                                                                               Homo
                                                                                                                                                                                                                                                                                                                 cementum;
                                                                                                                                                                                                                                                                                                                         periodontal disease;
                                                                                                                                                                                                                                                                                                                                                                     18-OCT-1995
                                                                                                        Claim
                                                                                                                                Dental treatment containing I treating periodontal disease
                                                                                                                                                            WPI; 1995-106672/14.
                                                                                                                                                                                      Amakawa M,
                                                                                                                                                                                                      (KAKE ) KAKEN
                                                                                                                                                                                                                         25-AUG-1993;
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                       Sequence
                                                                                                                                                                             Terashima
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     al Similarity
146; Conserv
                                                                                                                                                                                                                                                                                                                                  fibroblast growth factor;
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                                                                                                      Page 19; 35pp;
                                                                                                                                                                                                                                                                                                                 dentine.
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                         153
                                                                                                                                                                                      Asano T,
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                                                                                                                                  basic fibroblast growth factor e and promoting implant fixation
                                                                                                                                                                                                                                                                                                                                                                                                        153
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Pred. No. 1.5e-75;
; Mismatches 0;
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re-attachment; bone; membran
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                                                                                                                                                                                                                                                                                                                           bone; membrane;
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Query Match Best Local Similarity

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Matches 146;
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                                                                                                                         This is a basic fibroblast growth factor (bFGF) of human origin. It is used in a compsn. to treat periodontal disease. The compsn. promotes regeneration an re-attachment of the bone of the tooth socket, the periodontal membrane and the cementum and regeneration of dentine. The bFGF may be prepd. by recombinant methods, and is pref. formulated in a gel for application to the affected area.
                                                                                                                                                                                    Claim 7; Page 18; 35pp; Japanese.
                                                                                                                                                                                                              Dental treatment containing basic fibroblast growth factor - for treating periodontal disease and promoting implant fixation and
                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                           basic fibroblast growth factor; bFGF; homo sapiens; human; gel;
periodontal disease; regeneration; re-attachment; bone; membrane;
                                                                                                            Sequence
                                                                                                                                                                                                                                                                 Amakawa M,
                                                                                                                                                                                                                                                                                                                   25-AUG-1993;
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PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
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                                 palpedggsgafppghfkdpkrlycknggfflrihpdgrvdgvreksdphiklqlqaeer
                                                                                                                                                                                                                                                                                                                                                                                                                     basic fibroblast growth factor
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                                                                                                            154 AA;
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ilarity 100.0%;
Conservative (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein;
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                                                                   Score 785; DB 16;
Pred. No. 1.6e-75;
Mismatches 0;
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                                                                                                                                                                                                                                                               Sugimoto
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                                                                   Indels
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Best Local Sim
Matches 146;
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        AAP70301 standard;
                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                Disclosure;
                                                                                                                                                                                                                                                                                                                  WPI;
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                                                                                                                                                                                                                                                                                                                                                                                   30-JAN-1996.
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                                                                   TGQYKLGSKTGPGQKAILFLPMSAKS 146
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                                               tgqyklgsktgpgqkailflpmsaks
                                                                                                                                                            Similarity
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                                                                                                                                                   100.0%; ilarity 100.0%; Conservative (
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                                                                                                                                                                                                                                                               Page 7; 8pp; Japanese.
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         Protein; 155
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                                                                                                                                                    0;
                                                                                                                                                   Score 785; DB 17;
Pred. No. 1.6e-75;
Mismatches 0;
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This is the amino acid of the human basic fibroblast growth factor used in a novel method of treating oral mucosal disease esp. stomatitis and mucosal inflammation caused by chemotherapy or by radioactive treatment. The same protein lacking the N-terminal Ala can also be used in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Agent for treating oral mucosa diseases - contg. basic fibrol growth factor as active component, where diseases are caused chemotherapy or radioactive treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; basic fibroblast growth factor; bFGF; oral mucosal disestomatitis; inflammation; chemotherapy; radioactive treatment;
                                                                                                                                                                                                  1 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
                                  GVVSIKGVCANRYLAMKEDGRLLASKCYTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
                                                                                                                                gvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrkytswyvalkr
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RESULT 1
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AC AAP9
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Best Local Similarity
Matches 146; Conser
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14-MAR-1986;
09-APR-1986;
09-OCT-1986;
                                                                                                                                                                                                                                                                       hbFGF is produced using cDNA prepd. from RNA isolated from W138 or IMR90 human fibroblasts. hbFGF promotes growth of fibroblasts and other mesoderm-derived cells and is useful for promoting healing of wounds (eg burns), for prophylaxis and treatment of thrombosis and arteriosclerosis, and as a promoter for cell culture.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-JUN-1991
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                                                                                                                                                                                                                                                                                                                                                      Human basic fibroblast growth factor - proc
DNA techniques, useful for healing wounds,
thrombosis and arteriosclerosis treatment,
                                                                                                                                                                                                                                                                                                                                                                                                                        Kurokawa
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fibroblast growth
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                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                   Disclosure; Fig 1; 38pp; English.
                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB;
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25 JUN-1990
                   AAP94038;
                                       AAP94038
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                                                                                                         TGQYKLGSKTGPGQKAILFLPMSAKS 146
                                                                                                                             gvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrkytswyvalkr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         healing
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                                       standard;
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                                                                                                                                                                                                       100.0%; ilarity 100.0%; Conservative
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  (first entry)
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86JP-0057919.
86JP-0082699.
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                                      protein;
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Pred. No. 1.6e-75;
); Mismatches 0;
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Matches 146;
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Best Local :
                                                                           DNA encoding the sequence may be mutated to encode an analogue, of human basic fibroblast growth factor (bFGF) bFGF-C78/96S, which has reduced affinity for heparin. One or more positively-charged AAs in the heparin-binding domain (AAs 128-138) are replaced by neutral or negatively-charged residues as indicated in the feature table. A recombinant vector (pUC9-TSF11 or pUC9delH3-pTSF-3) contg. the mutated DNA can be used to transform bacterial or mammalian host cells for prodn. of the analogue.
                                                                                                                                                                                                                                                                                      07-JUL-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Misc-difference
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human basic fibroblast growth factor.
                                               Sequence
                                                                                                                                                          Disclosure; d 1-2; 44pp;
                                                                                                                                                                              to control neovascularisation.
                                                                                                                                                                                      Recombinant DNA encoding new fibroblast growth factor analogues - useful eg for accelerating wound healing
                                                                                                                                                                                                                              WPI; 1989-009785/02
                                                                                                                                                                                                                                                   Fiddes
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          Local Similarity
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                                                155 AA;
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128..138
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         100.0%;
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Score 785; DB 10;
Pred. No. 1.6e-75;
Mismatches 0;
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                   Length 155;
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130 tgqyklgsktgpgqkailflpmsaks 155

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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FGF have applications such as in vivo nerve regeneration, wound repair ischaemia and corneal repair. They may also have therapuetic uses in the CNS and PNS in treatment of cell death and neuronal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yeast prodn. of human basic and acidic fibroblast growth factor with acetylated amino-terminal, useful eg. for treating cell senescence, neuronal regression and cell death.
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N-PSDB; AAQ04716.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fibroblast growth factor; FGF; yeast; ischaemia;
                        bFGF truncated at its N-terminus.
                                                                                                                                                     AAR22232 standard; protein; 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; ; p; English.
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                                                                 23-JUN-1992 (first entry)
                                                                                                                                                                                                                                                                   130
                                                                                                                                                                                                                                                                                                              121
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Pred. No. 1.6e-75;
Mismatches 0;
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Best Local S
Matches 146
                                                                                                                                                                           AAR40159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
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The peptide sequence was deduced from the synthetic DNA sequence prepd. as described in EP-363875. E. coll cells transformed with the synthetic DNA were lysed and the supernatent purified, giving a 50:50 mixture of a 154 residue bFGF (2-155) having the amino acid sequence of the 155 residue form (Abraham et al., Science, 233, 545-548, 1986) shown here but without the N-terminal Met; and a 153 residue bFGF (3-155). An adduct of bFGF formed with heparin or heperan sulphate contg. the bFGF 9-10 Leu-Pro bond can be cleaved with pepsin A or cathepsin D to cleave this bond and release a peptide with the N-terminus be deleted up to and including residue 9, sequentially. This cleavage method can be used to obtain a pure form of the 146 amino acid bFGF (10-155) bFGF. The prod. can be used to treat wounds and hourse
Human; fibronectin; FN; fibroblast cell growth factor; FGF; fusion; cell adhesion; cell growth; anti-aging; cosmetics; wound healing; surgery.
                                                                                                                                                                              AAR40159 standard; peptide; 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    See also AAR22233.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      form of the 146 amino acid
to treat wounds and burns.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Prepn. of basic fibroblast growth factor - by forming adduct with heparin or heparan sulphate and cleaning with pepsin A or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1992-080021/10.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Basic fibroblast growth factor; adduct; heparin; heperan sulphate; pepsin A; cathepsin D; wounds; burns.
                                                                       Human bFGF peptide fragment #1
                                                                                                            07-FEB-1994
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mes 146; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 60
                                                                                                                                                                                                                                                                    TGQYKLGSKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                                                                                                                                                                                             GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
                                                                                                                                                                                                                                                                                                                                                                                                                 Paul F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    155 AA;
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100.0%; Pred. No. 1.6e-75;
tive 0; Mismatches 0;
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                                                                                                                Recombinant; chimeric; basic fibroblast growth factor; bFGF; glu3,5 FGF; expression; E. coli; stabilisation; disulphide bnods; thio-disulphide interchange; burns; surgical incisions; wound hea skin ulcers; bed sores; cardiovascular conditions; bone repair;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic functional polypeptide to promote wound healing, etc. contg. cell adhesion polypeptide from fibronectin and fibroblast
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                              Misc-difference
                                                                                                      musculoskeletal injuries; neurodegenerative disease
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Pred. No. 1.6e-75;
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                                                                                                                                                                                                                                                                                                                 The sequences given in AAR53270-71 represent recombinant chimeric basic fibroblast growth factors (bFGF). These proteins comprise a basic FGF having 155 amino acids in which Ala3 and Ser5 have been replaced by CG Glu, and opt. Cys78 and Cys96 are replaced by Lys, Asp, Glu, Asn, Gln, His, Ile, Leu, Val, Phe, Tyr, Met, Thr, Pro, Ala, Gly, Arg, or Trp, pref. Ser. The glu3,5 FGF has the mitogenic properties of tissue derived bFGF, but expression in E. coli is significantly greater than the native sequence, allowing high yield production of the bFGF. Replacing Cys78 and Cys96 by Ser causes stabilisation of the growth factor by eliminating thio-disulphide interchange. This facilitates the purification and enhances the stability of the isolated protein. The bFGF have therapeutic applications for healing burns, surgical inclsions and other wounds, for treating skin ulcers including bed sores, for cardiovascular conditions and restarting blood flow after heart attacks by revascularising the damaged tissue, for enhancing bone repair and treating musculoskeletal injuries, and in neuro-
                                                                                                                                                                                           Best Local Similarity Matches 146; Conserv
                                                                                                                                                                                                          Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
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04-NOV-1991;
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                                                             PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 60
                                 TGQYKLGSKTGPGQKAILFLPMSAKS 146
                                                                                                                              palpedggsgafppghfkdpkrlycknggfflrihpdgrvdgvreksdphiklqlqaeer
3; Column 15-18; llpp; English.
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91US-0783694.
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Pred. No. 1.6e-75;
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Copyright (c) 1993 - 2000 Comp
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26.0	26.2	26.3	26.4	26.4	26.4	26.5	26.7	26.8	27.5	27.5	29.7	29.9	30.0	30.1	30.2
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ALIGNMENTS

basic fibroblast growth factor precursor, 22.5K form - N;Alternate names: bFGF; fibroblast growth factor 2; pr N;Contains: basic fibroblast growth factor, 18K form 2; prostatic growth factor; prostat human

C;Species: Homo sapiens (man)
C;Date: 31-Jul-1989 #sequence_revision 31-Dec-1993 #text_change 21-Jul-2000
C;Date: 31-Jul-1989 #sequence_revision 31-Dec-1993 #text_change 21-Jul-2000
C;Accession: A33398; A61537; A26642; B32878; S00297; A54316; B54316; A33624; A25824;
R;Prats, H.; Kaghad, M.; Prats, A.C.; Klagsbrun, M.; Lelias, J.M.; Liauzun, P.; Chalo Proc. Natl. Acad. Sci. U.S.A. 86, 1836-1840, 1989
A;Title: High molecular mass forms of basic fibroblast growth factor are initiated by A;Reference number: A32398; MUID:89184522

A; Reference number: A; Accession: A32398

A; Molecule type: mRNA A; Residues: 1-210 < PR 1-210 <PRA>

A;Cross-references: GB:J04513; NID:g183083; PIDN:AAA52531.1; PID:g459811 R;Shlbata, F.; Baird, A.; Florkiewicz, R.Z. Growth Factors 4, 277-287, 1991 A;Title: Functional characterization of the human basic fibroblast growth factor A;Reference number: A61537; MUID:92110035 A;Accession: A61537; MUID:92110035

A; Molecule type: DNA A; Residues: 1-114 <SHI>

R;Kurokawa, T.; Sasada, R.; I FEBS Lett. 213, 189-194, 1987 A; Note: authors translated the codon GGA for residue Iwane, M.; Igarashi,

47

as

Ala

gene

A;Title: Cloning and expression of cDNA encoding human basic fibroblast growth factor A;Reference number: A26642; MUID:87162468 A;Accession: A26642

A;Accessiou: A;Andecule type: mRNA
A;Molecule type: mRNA
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A;Residues: 56-210 <KUR>
A;Residues: 56-210 <KUR>
A;Cross-references: GB:M27968; NID:g182562; PIDN:AAA52448.1; PID:g182563
A;Cross-references: GB:M27968; NID:g182562; PIDN:AAA52448.1; PID:g182563
A;Cross-references: GB:M27968; NID:g1872662, PIDN:AAA52448.1; PID:g182563
A;Cross-references: GB:M27968; NID:g187217066
A;Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organizat

A;Molecule type: mRNA
A;Rosidues: 56-210 <ABR>
A;Rosidues: 56-210 <ABR>
A;Rosidues: 56-210 <ABR>
A;Rote: the authors translated the codon GAA for residue 108 as Gly
R;Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Friedman, J.;
EMBO J. 5, 2523-2528, 1986
A;Title: Human basic fibroblast growth factor: nucleotide sequence a
A;Reference number: S00297; MUID:87053817 Gospodarowicz, D.

nucleotide sequence and genomic organi

A; Accession: S00297

A; Status: not compared with conceptual translation

A;Molecule type: DNA
A;Residues: 1-155 CAB2>
A;Residues: 1-155 CAB2>
A;Note: the authors translated the codon GAA for residue
R;Shimoyama, Y.; Gottoh, M.; Ino, Y.; Sakamoto, M.; Kato,
Jpn. J. Cancer Res. 82, 1263-1270, 1991 108 K.; as Gly Hirohashi,

Characterization of high-molecular-mass forms of basic fibroblast growth fac

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A. Title: Amino-terminal sequence of a large form A. Reference number: A25824; MUID:87156686 A. Accession: A25824
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R.Gimenez-Gallego, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
Biochem. Biophys. Res. Commun. 135, 541-548, 1986
A;Title: Human brain-derived acidic and basic fibroblast gro
A;Reference number: A90122; MUID:86186784
A;Accession: B24243
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A; Residues: 65-88, 'x', 90-98, 'x', 100 <GAU>
R; Sommer, A.; Brewer, M.T.; Thompson, R.C.; Moscatelli, Biochem. Biophys. Res. Commun. 144, 543-550, 1987
A; Title: A form of human basic fibroblast growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 65-102, 'X', 104-105 <GIM>
A; Experimental source: brain
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A, Title: Differential effects of heparin,
A; Title: Purification and characterization of the A; Reference number: S46253; MUID:94320639
                                               R; Patry, V.; Bugler, B.; Am
FEBS Lett. 349, 23-28, 1994
                                                                                                                                                                                                                                                                                                                                                       R;Watson, R.; Anthony, F.; Pickett, M.; Lambden, P.; Masson, G.M.; Thomas, E.J. Biochem. Biophys. Res. Commun. 187, 1227-1231, 1992
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A; Residues: 54-210 <SOM>
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A;Accession: S42242
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A;Accession: B24301
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                                                                             A; Experimental source: granulosa cells R; Patry, V.; Bugler, B.; Amalric, F.; 1
                                                                                                                                                                A; Molecule type: mRNA
A; Residues: 95-182 < RES>
                                                                                                                                                                                                               A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                              A; Reference number: I52267; MUID: 93038590 A; Accession: I52267
                                                                                                                                                                                                                                                                                                                           A; Title: Reverse transcription with nested polymerase chain reaction
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary
                                                                                                                                  ;Cross-references: GB:S47380; NID:g256535; PIDN:AAD13853.1;
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                                                                             F.; Prome, J.C.; Prats,
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                                                                          A;Title: Isolation, characterisation and tissue A;Reference number: A61550; MUID:87247652 A;Accession: A61550
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  A; Residues: R; Ueno, N.;
                        A; Molecule type: protein A; Residues: 16-35 <BER>
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F;82-86/Region: heparin binding *status predicted F;171-174/Region: heparin binding *status predicted
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C;Superfamily: fibroblast growth factor
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                                                                                                                                                                                      PALPEDGGSGAFPPGHFKDFKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 124
TGQYKLGSKTGPGQKAILFLPMSAKS
                                             TGQYKLGSKTGPGQKAILFLPMSAKS 146
                                                                                            GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 184
                                                                                                                   GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
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Pred. No. 1.6e-70;
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A; Experimental source: pituitary gland
R; Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Fiddes, J.C.
Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
A; Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organizat A; Reference number: A90924; MUID:87217066
A; Accession: A32878 basic fibroblast growth factor precursor - bovine (fragment)
N;Alternate names: bFGF; kidney-derived growth factor; prostatropin
C;Species: Bos primigenius taruus (cattle)
C;Date: 13-Aug-1986 #sequence_revision 02-Jun-1995 #text_change 24-Nov-1999
C;Date: 13-Aug-1986 #sequence_revision 02-Jun-1995 #text_change 24-Nov-1999
C;Accession: A24663; A32878; A33784; A61550; A61551; A60310; A61094; A01386; ARAbraham, J.A.; Mergia, A.; Whang, J.L.; Tumolo, A.; Friedman, J.; Hjerrild, A; Molecule type: mRNA A; Residues: 3-157 < AB A; Molecule type: mRNA A; Residues: 3-157 < ABR> A; Reference number: A94290; MUID:86261806 A; Accession: A24663 Science 233, 545-548, 1986 A;Title: Nucleotide sequence of a bovine clone encoding the angiogenic protein, basic R; Abraham, J.A.; Mergia, A. Science 233, 545-548, 1986 K.A.; G

tolini, J.; Hearn, M.T.W. Cell. Endocrinol. 51, 187-199, 1987

localisation

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initiator

or splice junction

Esch,

(F)

Ling,

Z ..

Guillemin,

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A; Molecule type: protein
A; Molecule type: protein
A; Residues: 12-26 <BOH>
C: Comment: The acidic and basic fibroblast growth factors are the major endothelial-cell
ell types in vitro (although bFGF is 30-100 times more potent than aFGF in stimulating t
C; Comment: This protein binds heparin more strongly than does aFGF.
C; Superfamily: fibroblast growth factor
C; Keywords: alternative splicing; angiogenesis; blocked amino end; growth factor; hepari
F; 1-157/Product: basic fibroblast growth factor, uterine form #status predicted <MAMI>
F; 4-157/Product: basic fibroblast growth factor, pituitary gamma form #status experiment
F; 16-157/Product: basic fibroblast growth factor, pituitary alpha form #status experiment
F; 16-157/Product: basic fibroblast growth factor, pituitary short form #status predicted
F; 23-157/Product: basic fibroblast growth factor, hepatic form #status experimental <MAT
F; 27-157/Product: basic fibroblast growth factor, renal form #status experimental <MAT
F; 29-33, 118-121/Region: heparin binding #status predicted
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A;Title: Isolation and partial molecular characterization of pituitary fibroblast A;Reference number: A22054; MUID:84298139
A;Accession: A22054
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A; Residues: 12-157 <ESC.
A; Experimental source: pluitary gland
R; Baird, A.; Esch, F.; Boehlen, P.; Ling,
Regul. Pept. 12, 201-213, 1985
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A; Title: Primary structure of bowlne pituitary basic fibroblast growth factor (FGF) and A; Reference number: A01386; MUID:86016731
A; Accession: A01386
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A;Title: Isolation and partial characterization of an endothelial cell growth factor A;Reference number: A60316; MUID:86095426
A;Accession: A60316
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Endocrinology 118, 82-90, 1986
A;Tille: Isolation of fibroblast growth factor
A;Reference number: A61094; MUID:86081530
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A; Residues: 27-35, 'X', 37-41 <UE3>
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A; Title: Isolation and partial character:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: protein
A;Residues: 27-35,'X',37-43 <BAI>A;Experimental source: kidney
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A; Residues: 12-25, 27-35, 'X', 37-40 <GOS>
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A; Contents: annotation
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R;Ueno, N.; Baird, A.; Esch, F.; Ling, N.; Guillemin,
Biochem. Biophys. Res. Commun. 138, 580-588, 1986
A;Title: Isolation of an amino terminal extended form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: protein
A; Residues: 23-35, 'X', 37-42 <UEN>
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                                                                                                                     Similarity
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1; Mismatches
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A;Cross-references: EM
R;El-Husseini, A.E.D.;
                                                                                                                                                    A; Accession:
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PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER

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Paterson,

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A; Accession. ....
A; Molecule type: mRNA
A; Residues: 1-154 <SHI>
A; Cross-references: GB:M22427; NID:g204285;
A; Cross-references: GB:M22427; NID:g204285;
                                                                                                                                                         R;Kurokawa, T.; Seno, M.; Ig
Nucleic Acids Res. 16, 5201,
A;Title: Nucleotide sequence
                                                                                                                                                                                                                                                                                                                                  C;Species: Rattus norvegicus (Norway rat)
C;Date: 21-May-1990 #sequence_revision 21-May-1990 #text_change 16-Jul-1999
C;Accession: A31674; S00876; S24309
R;Shimasaki, S.; Emoto, N.; Koba, A.; Mercado, M.; Shibata, F.; Cooksey, K.;
Blochem. Blophys. Res. Commun. 157, 256-263, 1988
A;Title: Complementary DNA cloning and sequencing of rat ovarian basic fibre A;Reference number: A31674; MUID:89061721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Superfamily: fibroblast growth factor
C;Keywords: growth factor; heparin binding; mitogen
F;18-22/Region: heparin binding #status predicted
F;107-110/Region: heparin binding #status predicted
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A;Title: Primary structure of ovine pituitary basic fibroblast growth factor. A;Reference number: S00185; MUID:88055577
A;Accession: S00185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       basic fibroblast growth factor precursor - N_{\ell} Alternate names: bFGF
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                                                   A; Molecule type: mRNA
A; Residues: 1-154 < KUR>
                                                                                                                                 A; Reference number: S00876;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Species: Ovis orientalis aries, Ovis
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                                                                                                                                 Acids Res. 16, 5201, 1988

Nucleotide sequence of rat basic nce number: S00876; MUID:88262516
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143; Conserv
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97.9%;
NID:g56203;
J.A.; Myal,
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1; Mismatches 2
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  PIDN:CAA30265.1;
Y.; Shiu, R.P.C.
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Biochim. Biopnys....

A;Title: PCR detection of the rat A;Title: PCR detection of the rat A;Title: PCR detection of the rat A;Title: PCR detection of the rat A;Title: PCR detection of the rat A;Title: PCR detection of the rat A;Reference number: S24309; MUID:9239546

A;Accession: S24309

A;Accession: S24309

A;Accession: S24309; MUID:923946

A;Accession: S24309; MUID:923946

A;Accession: S24309; MUID:923946

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A;Accession: S24309

A;A
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fibroblast growth factor - rabbit (fragment) C;Species: Oryctolagus cuniculus (domestic rabbit) C;Date: 14-Feb-1997 #sequence_revision 14-Feb-1997 C;Accession: I46711 R;Winkles, J.A.; Friesel, R.; Alberts, G.F.; Janat,
                                                                                                                                                        RESULT
146711
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A;Molecule type: mRNA
A;Residues: 1-154 <HEB>
A;Cross-references: GB:M30644; NID:g193296; PIDN:AAA37621.1; PID:g309239
C;Superfamily: fibroblast growth factor
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PCR detection of the rat brain basic fibroblast growth factor (bFGF) mRNA contance number: S24309; MUID:92329546
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PALPEDGGA-AFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHVKLQLQAEER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GVVSIKGVCANRYLAMKEDGRLLASKCVTEECFFFERLESNNYNTYRSRKYSSWYVALKR 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tch 97.0%; al Similarity 97.3%; 142; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    al Similarity
141; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96.4%;
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Pred. No. 2.5e-68;
3; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 756.5; DB 2;
Pred. No. 7.8e-68;
4; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIDN:CAA43863.1;
         Janat,
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                                                                  #text_change 16-Jul-1999
         M.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
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164

TGQYKPGPKTGPGQKAILFLPMSAKS

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A; Molecule type: DNA
A; Residues: 95-128 <MIT>
A; Cross-references: EMBL: X56804;
C; Superfamily: fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                     A; Note: sequence extracted from NCBI backbone (NCBIN:131000, NCBIP:131001)
R; Mitrani, E.; Gruenbaum, Y.; Shohat, H.; Ziv, T.
Development 109, 387-393, 1990
A; Title: Fibroblast growth factor during mesoderm induction in the early clarification number: $23636; MUID:90382254
A; Accession: $23636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Gallus gallus (chicken)
C;Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change
C;Accession: A48834; S23636
R;Borja, A.Z.; Meijers, C.; Zeller, R.
Dev. Biol. 157, 110-118, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Am. J. Pathol. 143, 518-527, 1993
A;Title: Elevated expression of basic fibroblast growth factor in an immortalized A;Reference number: 146711; MUID:93343209
A;Accession: I46711
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                  Db
                                                                                     δÃ
                                                                                                                          В
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         δÃ
                                                                                                                                                           δÃ
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A;Molecule type: nucleic
A;Residues: 1-189 <BOR>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:L12034; NID:g165014; PIDN:AAA31248.1;
                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Experimental source: embryo
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Best Local S
Matches 134
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Best Local
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TGQYKLGSKTGPGQKAILFLPMSAKS
                                                  GVVSIKGVSANRFLAMKEDGRLLALKCATEECFFFERLESNNYNTYRSRKYSDWYVALKR
                                                                   GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
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99.3%;
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91.8%;
                                                                                                                                                                                                  Score 723; DB 2;
Pred. No. 2.1e-64;
5; Mismatches 7;
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Pred. No. 4.7e-66;
1; Mismatches 0
             146
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RESULT 9

A40117

basic fibroblast growth factor - African clawed frog

C;Species: Xenopus laevis (African clawed frog)

C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999

C;Accession: A40117; A29618

R;Kimelman, D.; Abraham, J.A.; Haaparanta, T.; Palisi, T.M.; Kirschner, M.W.

Science 242, 1053-1056, 1988

A;Title: The presence of fibroblast growth factor in the frog egg: its role
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Monodelphis domestica
C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 12-Apr-1995
C;Accession: S31622
R;Kusewitt, D.F.; Sabourin, C.L.K.; Budge, C.L.; Ley, R.D.
submitted to the EMBL Data Library, Sep-ember 1992
A;Description: Characterization of cDNA encoding basic fibroblast growth factor A;Reference number: S31622
A;Accession: S31622
                                                                                                                                                                                                                                   A;Reference number: A29618; MUID A;Accession: A29618
A;Molecule type: mRNA
A;Residues: 95-110,112-155 <KI2>
C;Superfamily: fibroblast growth
C;Keywords: growth factor
                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-155 <KIM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-164 < KUSS
A; Cross references: EMBL: Z15154
C; Superfamily: fibroblast growth factor
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                                                                                                                                                                                                                                                                                                                                   Cell 51, 869-877, 198
A; Title: Synergistic
                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:M18067; NID:g214177; R;Kimelman, D.; Kirschner, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: A40117; MUID:89058621
A; Accession: A40117
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                                                                                                                                                  Query Match
Best Local S
Matches 121
                                                                                                                                                                                                                                   Superfamily: fibroblast growth Reywords: growth factor
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RTGQYKLGSKTGPGQKAILFLPMSAKS 1.46
                                  GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
                                                                                RGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALK 119
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                 GVVSIKGITANRYLAMKEDGRLTSLRCITDECFFFERLEANNYNTYRSRKYSSWYVALKR
                                                                                                                                                                 Similarity
                                                                                                                                                  82.3%;
nilarity 82.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                      1987
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92.5%;
                                                                                                                                              Score 646; DB 1; 1
Pred. No. 7.4e-57;
9; Mismatches 16;
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                                                                                                                                                                                                                                                      factor
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                                                                                                                                                                                                                                                                                                                                     and TGF-beta
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                                                                                                                                                                                 Length 155;
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                             131 GPGQKAILFLPMSAKS 146
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HYGOKAILFLPLPVSS
                                                                               YLAMKEDGRLLASKCYTDECFFFERLESNNYNTYRSRKYT--SWYVALKRIGQYKLGSKT 130
                                                               YLAMDTDGLLYGSQTPNEECLFLERLEENHYNTYTSKKHAEKNWFVGLKKNGSCKRGPRT 138
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A;Molecule type: DNA
A;Residues: I-155 <HAL>
C;Superfamily: fibroblast growth
C;Keywords: growth factor; hepari
                                                                                                                                                                                                                                                                                A: Reference number: A60721; MUID:90270291
                                                                                                                                                                                                                                                                                                                                                                                                  acidic fibroblast growth factor - golden hamster
N;Alternate names: heparin-binding growth factor 1
C;Species: Mesocricetus auratus (golden hamster)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-125 <SOM>
C; Superfamily: fibroblast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Sommer, A.; Moscatelli, D.; Rifkin, D.B.
Biochem. Biophys. Res. Commun. 160, 1267-1274,
A;Title: An amino-terminally extended and post:
A;Reference number: A32484; MUID:89273588
A;Accession: A32484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         basic fibroblast growth factor precursor, 25K - guinea pig (fragments) C;Species: Cavia porcellus (guinea pig) C;Date: 20-Oct-1989 *sequence_revision 20-Oct-1989 *text_change 15-Jun C;Accession: A32484
                                                                                                                                                                                                                                                                                                                                                          C;Accession: A60721
R;Hall, J.A.; Harris, M.A.; Malark, M.; Mansson, P.E.;
                                                                                                                                                                                                                                                           A; Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Status: preliminary; nucleic acid sequence
                  1 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
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PPGNYKKPKLLYCSNGGHFLRILPDGTYDGTRDRSDQHIQLQLSAESAGEVYIKGTETGQ 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGQYKLGSKTGPGQKAILFLPMSAKS 146
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                                                                               Similarity 77; Conser
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Pred. No. 2.9e
2; Mismatches
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                                                                                              Score 396; DB 1;
Pred. No. 4.9e-32;
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                                                                               Mismatches
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A33665
acidic fibroblast growth factor 1 precursor [validated] - human
acidic fibroblast growth factor 1 precursor [validated] - human
N;Alternate names: beta-ECGF; endothelial cell growth factor beta; heparin-b
C;Species: Homo sapiens (man)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 08-Dec-2000
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 08-Dec-2000
C;Accession: A33665; A32316; S18217; A43804; A24662; JH0707; S35535; S35536;
C;Accession: A33665; A32316; S18217; A43804; A24662; JH0707; Gospodarowicz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:M13361; NID:g181941; PIDN:AAA79245.1; PID:g181942 R;Yu, Y.L.; Kha, H.; Golden, J.A.; Migchielsen, A.A.J.; Goetzl, E.J.; Tur J. Exp. Med. 175, 1073-1080, 1992 A;Title: An acidic fibroblast growth factor protein generated by alternat A;Reference number: JH0707; MUID:92202857 A;Accession: JH0707
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:X51943; NID:g32435; PIDN:CAA36206.1; PID:g32436 R;Jaye, M.; Howk, R.; Burgess, W.; Ricca, G.A.; Chiu, I.M.; Ravera, M.W.; Science 233, 541-545, 1986 A;Title: Human endothelial cell growth factor: cloning, nucleotide sequence, R;Reference number: A24662; MUID:86261805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A:Cross-references: EMBL:M23086
R;Chiu, I.M.; Wang, W.P.; Lehtoma, K.
Oncogene 5, 755-762, 1990
A;Title: Alternative splicing generates two
A;Reference number: A43804; MUID:90265618
A;Accession: A43804
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A;Title: Cloning and sequence analysis of A; Reference number: $18217; MUID:92019819
A; Accession: $18217
A; Molecule type: DNA
A; Molecule type: DNA
                                                                                                                                                                                                             A;Cross-references: GB:L01485
A;Accession: S35536
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R;Payson, R.A.; Canatan, H.; Chotani, M.A.; Wang, W.P.; Harris, S.E.; Myers, R.L.; Chiu.
Nucleic Acids Res. 21, 489-495, 1993
A;Title: Cloning of two novel forms of human acidic fibroblast growth factor (aFGF) mRNI
A;Reference number: S35535; MUID:93181239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-155 < YUY>
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A; Residues: 1-155 < JAY>
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Mol. Cell. Biol. 9, 2387-2395, 1989
A;Title: Cloning of the gene coding for human
A;Reference number: A32316; MUID:89343957
A;Accession: A32316
                   Biochem.
                                                                              A; Cross-references: GB:L01487
                                                                                                                     A; Residues: 1-58 <PA2>
                                                                                                                                               A; Molecule type: mRNA
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A; Residues: 1-58 < PAY>
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A; Residues: 1-155 <WAN>
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A; Cross-references: GB:M30491
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                   Biophys.
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                                                       Dionne,
                      C.A.; J
                   J.A.; Jaye, M
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M. 7-13,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the human acidic fibroblast growth
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PPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANR 72

PPGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHIQLQLSAESVGEVYIKSTETGQ

YLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYT--SWYVALKRTGQYKLGSKT 130 YLAMDTDGLLYGSQTPNEECLFLERLEENHYNTYISKKHAEKNWFVGLKKNGSCKRGPRT

138

Matches

Conservative

16;

Mismatches

Indels

Gaps

78

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A;Experimental source: brain VR;Chavan, A.J.; Haley, B.E.; Volkin, D.B.; Marfi Biochemistry 33, 7193-7202, 1994
A;Title: Interaction of nucleotides with acidic A;Reference number: A53639; MUID:94271773
A;Accession: A53639
                                                                                                  C; Keywords: alternative splicing; growth factor; heparin binding F; 16-155/Product: fibroblast growth factor 1 *status experimental F; 129/Binding site: carbohydrate (Asn) (covalent) *status absent
                                                                                                                                                                                  A;Cross-references: GDB:119909; OMIM:13:
A;Map position: 5q31.3-5q33.2
A;Introns: 57/1: 91/3
C;Superfamily: fibroblast growth factor
                                                                                                                                                                                                                                                                                                                A;Molecule type: protein
A;Residues: 16-30,'x',32-38;73-75,'x',77-97,'x',99-101;128-131,'x',133-140,'x',142-15
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: protein
A;Residues: 16-30,'X',32-49 <GAU>
R;Gautschi-Sova, P.; Muller, T.; Bohlen, P.
Blochem. Biophys. Res. Commun. 140, 874-880,
A;Title: Amino acid sequence of human acidic
A;Reference number: A26386; MUID:87048871
A;Accession: A26386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Experimental source: brain
R; Gautschi, P.; Frater Schroder, M.; Bohlen,
FEBS Lett. 204, 203-207, 1986
A; Title: Partial molecular characterization
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A;Title: The complete amino acid sequence of human brain-derived A;Reference number: A24820; MUID:86295741
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Gimenez-Gallego, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A. Blochem. Blophys. Res. Commun. 135, 541-548, 1986
A;Title: Human brain-derived acidic and basic fibroblast growth A;Reference number: A90122; MUID:86186784
                                                                                                                                                                                                                                                                                            A; Gene: GDB: FGF1; FGFA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Residues:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: A24820
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Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        type: protein
16-155 <GA2>
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  Similarity
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49.2%;
55.9%;
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  Pred.
                        Score
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386; DB 1;
No. 4.8e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Marfia, K.E.;
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acidic fibroblast growth factor 1 - rat
%;Alternate names: heparin-binding growth factor 1
C;Species: Rattus norvegicus (Norway rat)
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 16-Jul-1999
C;Accession: S04147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: protein
A;Residues: 22-30,'X',32-44,'X',46-48 <RIS>
C;Superfamily: fibroblast growth factor
C;Keywords: growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: mRNA
A;Residues: 1-155 <SCH>
A;Cross-references: GB:S63263; NID:g234372;
R:Risau, W.; Gautschi-Sova, P.; Boehlen, P.
EMBO J. 7, 959-962, 1988
A;Title: Endothelial cell growth factors in
A;Reference number: S02639; MUID:88296438
A;Accession: S02639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N;Alternate names: endothelial cell growth factor C;Species: Gallus gallus (chicken) C;Species: Gallus gallus (chicken) C;Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change 16-Jul-1999 C;Accession: A60130; S02639
                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-155 <GOO>
A; Cross-references: EMBL:X14232; NID:g56351;
C; Superfamily: fibroblast growth factor
C; Keywords: growth factor; heparin binding
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A;Accession: A60130
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δÃ
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                                                                                                                                                                                                                                                                                                                R;Goodrich, S.P.; Yan, G.C.; Bahre Nucleic Acids Res. 17, 2867, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Schnuerch, H.; Risau, W.
Development 111, 1143-1154, 1991
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Best Local S
Matches 78
                                       Query Match
Best Local S
Matches 75
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 54.1es 78; Conservative
13 PPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 ALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREXSDPHIKLQLQAEERG 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFFERLESNNYNTYRSRKYT--SWYVALK 119
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                                       Similarity 55.175; Conservative
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55.1%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20;
                                         17;
                                       Score 382; DB
Pred. No. 1.2e
17; Mismatches
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Pred. No. 8.6e-31;
0; Mismatches 40
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                            DB 2,
1.2e-30;
42;
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Search completed: Job time: 242 sec

June

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A;Cross-references: GB:M30641; NID:g193284; PIDN:AAA37618.1; PID:g309236 R;Madiai, F; Hackshaw, K.V.; Chiu, I.M. Gene 179, 231-236, 1996 A;Title: Cloning and characterization of the mouse Fgf-1 gene. A;Reference number: JC5231; MUID:97128312 A;Accession: JC5231
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Hebert, J.M.; Basilico, C.; Goldfarb, M.; Haub, O.; Martin, G.R. Dev. Biol. 138, 454-463, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Mus musculus (house mouse)
C;Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
C;Accession: D37360; JC5231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     acidic fibroblast growth factor - mouse
N;Alternate names: aFGF; FGF-1
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A; Residues: 1-155 <MAD>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Reference number: A37360; A; Accession: D37360
                                                                                                                                                                                                                                                                                                                                                                              A; Gene: Fgf-1
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C;Comment: This protein is an
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A; Residues: 1-155 <HEB>
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Best Local Similarity
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                                                                                                                                                                            PPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGVCANR 72
HYGQKAILFLPLPVSS
                                   GPGQKAILFLPMSAKS
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                                                                             YLAMDTEGLLYGSQTPNEECLFLERLEENHYNTYTSKKHAEKNWFVGLKKNGSCKRGPRT 138
                                                                                                 YLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYT--SWYVALKRTGQYKLGSKT 130
                                                                                                                                                        PLGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHIQLQLSAESAGEVYIKGTETGQ 78
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55.1%;
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154
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SwissProt_40:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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FGF9 MOUSE	FGF9_HUMAN	FGF5_HUMAN	FGFB_XENLA	FGF4_MOUSE	FGF3_HUMAN	FGF3_MOUSE	FGF3_XENLA	FGFA_XENLA	FGF5_RAT	FGF5_MOUSE	FGF4_BOVIN	FGF3_CHICK	FGF4_HUMAN	FGF6_HUMAN	FGF6_MOUSE	FGF3_BRARE	FGF4_CHICK	FGF1_BOVIN	FGF1_PIG	FGF1_MOUSE	FGF1_CHICK	FGF1_HUMAN	FGF1_MESAU	FGF2_XENLA				FGF2_MOUSE	FGF2_RAT	FGF2_SHEEP	FGF2_BCVIN	FGF2_HUMAN	ID	
P5413	P31371	P12034	P48806	P1140	P1148	P0552	P3638	P4880	P4880	P1565	P48803	P48801	P08620	P1076	, P2165	P48802	P48804	P0396	P20002	P1093	P195	P05230	P34004	P12226	P48798	P48800	P4879	P1565	P1310	P2000	P0396	P090	Desc	
0 mus m	homo		306 xenopus lae	3 mus m	187 homo sapien	4 mus musc	σ	305 xenopus lae	307 rattus norv	556 mus musculu	3 bos	gallu	homo	167 homo sapien	00	N	gall	sod	sus				mesocric		monode	-	ø	555 mus musculu	9 rattu)03 ovis aries	9 bos t	38 homo sap	Description	

4 5	44	43	42	41	40	39	38	37	36	35	34
203	203	204.5	205.5	206.5	207.5	207.5	209.5	210	210.5	212.5	216
25.9	25.9	26.1	26.2	26.3	26.4	26.4	26.7	26.8	26.8	27.1	27.5
215	208	194	207	207	194	194	194	211	194	209	208
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P70492 rattus norv	015520 homo sapien	Q9n198 sus scrofa	O43320 homo sapien	O54769 rattus norv	P48808 ovis aries	P21781 homo sapien	P36363 mus musculu	Q9np95 homo sapien	P79150 canis famil	Q91875 xenopus lae	P36364 rattus norv

ALIGNMENTS

RT RL RN RP	RA RA		RY R	RA RT	RA RA RA RT		RESULT FGF2_H ID F
"High molecular mass forms of basic fibroblast growth factor are initiated by alternative CUG codons."; Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989). [6] SEQUENCE OF 10-35. MEDLINE-86275260; PubMed-3732516;	ICE FROM N.A. IE=89184522; PubMed=2538817; H., Kaghad M., Prats A.C., Klagsbrun M., Lelias In P., Chalon P., Tauber J.P., Amalric F., Smith D.;	SEQUENCE FROM N.A. MEDILINE-87162468; PubMed-2435575; KUTOKAWA T., Sasada R., Iwane M., Igarashi K.; "Cloning and expression of cDNA encoding human basic fibroblast growth factor."; FEBS Lett. 213:189-194(1987).	SEQUENCE FROM N.A. MEDLINE-87213238; PubMed-3579930; Sommer A., Brewer M.T., Thompson R.C., Moscatelli D., Presta M., Rifkin D.B.; "A form of human basic fibroblast growth factor with an extended amino terminus."; Biochem. Biophys. Res. Commun. 144:543-550(1987).	SEQUENCE FROM N.A. SEQUENCE FROM N.A. MEDLIND-87217066; Pubmed-3472745; Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.; "Human basic fibroblast growth factor: nucleotide sequence, genomic organization, and expression in mammalian cells."; Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).	SEQUENCE FROM N.A. SEQUENCE FROM N.A. MEDLINE-87053817; PubMed=3780670; Abraham J.A., Whang J.L., Tumolo A., Mergia A., Friedman J., Gospodarowicz D., Fiddes J.C.; "Human basic fibroblast growth factor: nucleotide sequence and genomic organization."; genomic organization."; EMBO J. 5:2523-2528(1986).	Ol-MOV-1988 (Rel. 09, Created) Ol-MOV-1988 (Rel. 09, Last sequence update) Ol-MAR-2002 (Rel. 41, Last sequence update) Ol-MAR-2002 (Rel. 41, Last annotation update) Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin). FGF2 OR FGFB. Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. NCBI_TaxID-9606;	1 UMAN GF2_HUMAN STANDAR

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Story M.T., Esch F., Shimasaki S., Sasse J., Jacobs S.C., Lawson R.K., "Amino-terminal sequence of a large form of basic fibroblast growth factor isolated from human benign prostatic hyperplastic tissue."; "Amino-terminal sequence of a large form of basic fibroblast growth factor isolated from human benign prostatic hyperplastic tissue."; "Amino-terminal sequence of a large form of the sequence 
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MEDLINE=92121151; pubMed=176963;
Ago H., Kitagawa Y., Fujishima A., Mats
"Crystal structure of basic fibroblast
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-97040521; PubMed-8885834;
Moy F.J., Seddon A.P., Boehlen P., Powers R.;
"High-resolution solution structure of basic
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Zhu X., Komiya H., Chirino A., Faham S.,
Hsu B.T., Rees D.C.;
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RESULT
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01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin) [Contains: Kidney-derived growth
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       MEDLINE-86095426; PubMed-4081126; Baird A., Esch F., Boehlen P., Ling N., "Isolation and partial characterization factor from the bovine kidney: homology
                                                                                                                                                                                                            Esch F., Baird A., Ling N., Ueno N., Hill F., Denoroy L. Gospodarowicz D., Boehlen P., Guillemin R.; "Primary structure of bovine pituitary basic fibroblast (FGF) and comparison with the amino-terminal sequence of
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
MEDLINE-86261806; PubMed-2425435;
MEDLINE-86261806; PubMed-2425435;
Abraham J.A., Mergia A., Whang J.L., Tumolo A.,
Hjerrild K.A., Gospodarowicz D., Fiddes J.C.;
"Nucleotide sequence of a bovine clone encoding
protein, basic fibroblast growth factor.";
Science 233:545-548(1986).
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pec
                                                                                                            growth factor.
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Ueno N., Baird A., Esch F., Ling
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         Gospodarowicz D.; of an endothelial cell growth with basic fibroblast growth
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                                                                                                                                                                                                             st growth factor of bovine
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                                                                                                                          fibroblast
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EMBL; M13440; AAA30518.1; PIR; AA2463; GKBOB.
PIR; AA2463; GKBOB.
PIR; AA24819; A24819.
PIR; A32878; A32878.
PDB; 1BAS; 31-OCT-93.
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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                                                                                                                                                                                                                                                                                                                                                 Growth factor;
                                                                                                                                                                                                                                                                                                                                                              SMART; SM00442; FGF; PROSITE; PS00247; HB
                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00262; IL1HBGF ProDom; PD000831; HBGF_FG
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the European
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TISSUE-Kidne
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B.T., Rees D.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  s SWISS-PROT entry is copyright. It is produced through a collab ween the Swiss Institute of Bioinformatics and the EMBL outst European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
SUBUNIT: MONOMER.
MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN
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 12:201-213(1985).
                                                                                                                                                                                                                                                                                                                                              Mitogen;
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 Anglogenesis; Heparin-binding;
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CELL ATTACHMENT SITE (
HEPARIN (POTENTIAL).
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01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation updat
Heparin-binding growth factor 2 precursor (
growth factor) (BFGF) (Prostatropin).
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                                                                                                                                                                                        Simpson R.J., Moritz R.L., Lloyd
Rubira M.R., Burgess A.W.;
"Primary structure of ovine pitui
                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutel
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
Bovidae; Caprinae; Ovis.
NCBI_TaxID=9940;
                                           the
                                                                                                                                                                                                                        MEDLINE=88055577; PubMed=3678486;
                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. Sutton R., Ward W.G.,
                                                                                                                                                                                                                                                                                                                                         Ovis aries (Sheep).
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                                                                                                                                                                                                                                     SEQUENCE
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                                       s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it
                                                                                                                           S LETT. 224:128-132(1987).
FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGE IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TY VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION CONCENTRATION OF THESE 2 GROWTH FACTORS.
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and this statement is not removed.
requires a license agreement (See
an email to license@isb-sib.ch).
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                                                                                     BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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No. 1.3e-74;
                                                                                                                                                                                                                                                                  Cam G.R.;
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           . Usage by and for commercial http://www.isb-sib.ch/announce/
                                as its content
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cora; Bovoidea;
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CELL TYPES
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"Nucleic Acids ....

Nucleic Acids ....

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(3)

SEQUENCE OF 1-28 FROM N.A.

STRAIN-SPRAGUE-DAWLDY; TISSUE-Testis
C STRAIN-SPRAGUE-DAWLDY; TISSUE-Testis
MEDLINE-97200905; PubMed-9048734;
MEDLINE-97200905; PubMed-9048734;
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Ol-JAN-1990 (Rel. 13, Created)
Ol-JAN-1990 (Rel. 13, Last sequence update)
Ol-MAR-2002 (Rel. 41, Last annotation update)
Ol-MAR-2002 (Rel. 41, Last annotation update)
Ol-Mar-2004 (HBGF-2)
                                                                                                                                                                                                                                                                                                                                                                                              Biochem.
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
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InterPro; IPR002348;
Pfam; PF00167; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-SPRAGUE-DAWLEY; TISSUE-Ovary;
MEDLINE-89061721; PubMed-319637;
Shimasaki S., Emoto N., Koba A., Mercado M., Shibata F.,
Cooksey K., Baird A., Ling N.;
"Complementary DNA cloning and sequencing of rat ovarian
fibroblast growth factor and tissue distribution study of
Biochem. Biophys. Res. Commun. 157:256-263(1988).
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growth factor) (BFGF) (Prostatropin)
FGF2 OR FGF-2.
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ProDom; PD000831; HBGF_FC
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                                                                                                                                                                                                                                                                                                    MEDLINE=88262516;
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                                                                                                                                                                                                                                                                           Kurokawa
                                                                                                                                                                                                             AEDLINE=88262516; PubMed=3387229;
(urrokawa T., Seno M., Igarashi K.;
Nucleotide sequence of rat basic fibr
nucleic Acids Res. 16:5201-5201(1988).
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S00185; S00185.
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Pred.
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Sciurognathi; Muridae
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RESULT 5
FGF2_MOUSE
ID FGF2_M
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DT 01-APR
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Best Local Similarity
Matches 142; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "PCR detection of the rat brain basic fibroblast growth factor (mRNA containing a unique 3' untranslated region.";
Biochim. Biophys. Acta 1131:314-316(1992).
-i- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
 P15655;
01-APR-1990 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                    SMART; SM00442; FGF; 1.
PROSITE: PCOOCC
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EMBL; X07285; CAA30265.1; -.
EMBL; U78079; AAC53225.1; -.
EMBL; X61697; CAA43863.1; -.
                                FGF2_MOUSE
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PIR; A31674; A31674.
HSSP; P09038; 1BFF.
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InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-SPRAGUE-DAWLEY; TISSUE-Brain; MEDLINE-92329546; PubMed-1378302;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      El-Husseini A.E.D.,
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TISSUE SPECIFICITY:
MISCELLANEOUS: THIS
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                                                                                                                                                                                                                  GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
                                                                                                     TGQYKLGSKTGPGQKAILFLPMSAKS
                                                                                                                                TGQYKLGSKTGPGQKAILFLPMSAKS 145
                                                                                                                                                          GVVSIKGVCANRYLAMKEDGRLLASKCVTHECFFFERLESNNYNTYRSRKYSSWYVALKR
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14, Created
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97.3%;
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PROTEIN BINDS HEPARIN MORE STRONGLY THAN
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                                                                                                                                                                                                                                                                         Score 761.5; DB 1;
Pred. No. 4.4e-73;
3; Mismatches 0;
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HEPARIN (POTENTIAL).
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Matches 141
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PROSITE; Pour
Prowth factor;
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CHAIN
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PROSITE; PS00247; HBGF_FGF;
GROWTh factor; Mitogen; Ang
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EMBL; AF065903; AAC17503.1; --
EMBL; AF065904; AAC17504.1; --
EMBL; AF065905; AAC17505.1; --
EMBL; AF065905; C37360; C37560; C375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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[2]
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"Isolation of cDNAs encoding four mouse FGF family me
characterization of their expression patterns during
Dev. Biol. 138:454-463(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-APR-1990 (Rel. 14, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2)
growth factor) (BFGF) (Prostatropin).
FGF2 OR FGF-2.
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InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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ProDom; PD000831; HBGF_FGF;
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STRAIN-C57BL/6J, A/J, AND NOD/LtJ; TISSUE-Spleen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE-90201563; PubMed-2318343;
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Mammalia; Eutheria;
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                                                               AFGF. SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
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141; Conserv
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17153
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Rodentia;
                                                                                                                                                                                  96.4%;
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                                                                                                                                                                                                                                                                               HEPARIN (POTENTIAL)
HEPARIN (POTENTIAL)
; 689F677416274388
                                                                                                                                                                                     Score 756.5;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                      HEPARIN-BINDING GROWTH FACTOR
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Sciurognathi;
                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Haub O., Martin
e FGF family memb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vertebrata;
                                                                                                                                                                                     .5e-72;
                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Muridae;
                                                                                                                                                                                                                                                                                    CRC64;
                                                                                                                                                                                                           Length
                                                                                                                                                                 Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 embryogenesis.";
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                                                                                                                                                                                                             154;
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L outstation -
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129

TGQYKLGSKTGPGQKAILFLPMSAKS 154

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                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                   Matches 136;
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RABIT
                                                                                                                                                                                                                                                  BINDING
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FGF2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 (HBGF-2) (Basic factor) (BFGF) (Prostatropin) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immortalized rabbit smooth muscle cell line.";

Am. J. Pathol. 143:518-527(1993).

-i- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.

-i- SUBUNIT: MONOMER.

-i- SUBUNIT: MONOMER.

-i- SUBUNIT: MONOMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; C
Mammalia; Eutheria; Lagomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FGF2_RABIT P48799;
                                                                                                                                                                                                                                                                                           PROSITE; PS002
Growth factor;
                                                                                                                                                                                                                                                                                                                                                EMBL; L12034; AAA31248.1; -. HSSP; P09038; 1BFF. InterPro: IPR002209; HBGF_FGF. Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement (So or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Winkles J.A., Friesel R., Alberts G.F., Janat M. "Elevated expression of basic fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=93343209; PubMed=8342599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN-NEW ZEALAND WHITE; TISSUE-Smooth
                                                                                                                                                                                                                                                                                                                       SMART; SM00442; FGF;
                                                                                                                                                                                                                                                                               BINDING
 121
                           121
                                                                                61
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                                                                                                          PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
TGQYKLGSKTGPGQKAI
                                                      GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR
                                                                   GVVSIKGVCANRYLAMKEDGRLLASKCYTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
                           TGQYKLGSKTGPGQKAI 137
                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                   PD000831; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                      PS00247; HBGF_FGF;
                                                                                                                                                                                                                                    18
107
137
137 AA;
                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                    Mitogen; Angiogenesis; Heparin-binding.

B 22 HEPARIN (POTENTIAL).

T 110 HEPARIN (POTENTIAL).

AA; 15418 MW; 0D9EE457B88E8C51 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN
                                                                                                                                                                               94.0%;
99.3%;
                                                                                                                                                                                                                                                                                                          ۳.
                                                                                                                                                                   1;
                                                                                                                                                                                  Pred.
                                                                                                                                                                                            Score
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a; Leporidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                   Mismatches
                                                                                                                                                               137
                                                                                                                                                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vertebrata; Euteleostomi; ae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           muscle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   factor
                                                                                                                                                                                             Length 137;
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RESULT
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Best Local S
Matches 134
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FGF2_(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ol-FEB-1996 (Rel. 33, Created)
Ol-FEB-1996 (Rel. 33, Last sequence update)
Ol-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF).
FGF2 OR FGF-2.
                                                                                                                                                                                                                    CHAIN
BINDING
BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a copyright the EWBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.isb-slb.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                      pfam; PF00167; FGF; 1.
pRINTS; PR00262; IL1HBGF.
proDom; PD000831; HBGF_FGF;
                                                                                                                                                                                                                                                                                                                                                            EMBL; M95707; AAA48617.1; -.
HSSP; P09038; 1BFF.
InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antisense mRNAs during chicken embryogenesis. Dev. Biol. 157:110-118(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Borja A.Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
                                                                                                                                                                                                                                                                                  PROSITE; PS002. Growth factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Borja A.Z., Zeller R., Meijers C.; "Expression of alternatively splic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                           SMART; SM00442; FGF; 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-93246053; PubMed-7683281;
                                                                                                                                                                                                                                                                       PROPEP
 133
                        121
                                                                                                                                                     Local Similarity
nes 134; Conserv
                                                                                                    13
                                                 73
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGE IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TY VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MISCELLANEOUS: THIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBUNIT: MONOMER.
                                                                                                 GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
              TGQYKLGSKTGPGQKAILFLPMSAKS
                                                 TGQYKPGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                     PS00247; HBGF_FGF;
actor; Mitogen; Ang:
1 12
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13
30
119
158 AA;
                                                                                                                                                       Conservative
                                                                                                                                                                                                                  158
34
122
17374
                                                                                                                                                                92.1%;
                                                                                                                                                                                                                                                                       Angiogenesis; Heparin-binding BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROTEIN BINDS
                                                                                                                                                                                                                      MW;
                                                                                                                                                                                                                                                                                                  <u>-</u>
                                                                                                                                                     Score 723; DE Pred. No. 5.1e 5; Mismatches
                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 spliced bFGF first coding
en embryogenesis.";
                                                                                                                                                                                                                    HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
7B69B684C17F1816 C
                                                                                                                                                                                                                                                           HEPARIN-BINDING GROWTH FACTOR
 158
                         146
                                                                                                                                                                  رياري برياري برياري الماري                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HEPARIN MORE STRONGLY THAN
                                                                                                                                                                    DB 1;
.1e-69;
                                                                                                                                                                                                                       CRC64
                                                                                                                                                                               Length 158;
                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E ANGIOGENIC CELL TYPES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               restrictions
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a collaboration -
MBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                       is in no way for commercial
                                                                                                                                                        0
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RESULT 8
FGF2_MONDO
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Best Local :
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BINDING
SEQUENCE
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PRINTS; PR00262; ILHBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
Growth factor; Mitogen; Angiogenesis; Heparin-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contents to the statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Monodelphis domestica (Short-tailed grey opossum).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Metatheria; Didelphimorphia; Didelphidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                growth factor) (BFGF) (Prostatropin).
FGF2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FGF2_MONDO P48798;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; Z15154; CAA78854.1; ALT_INIT.
HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=94296558; PubMed=8024698;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=13616;
130
                                        120
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                                                                                                                                                                                                                                                                                                Local Similarity
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                                                                                                                                                                                                     PALPED-GGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEE
                     RTGQYKLGSKTGPGQKAILFLPMSAKS 146
                                                                                     {f PALSGDGGGGGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGIREKSDPNIKLQLQAEE}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                 1
10
28
117
156
                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                          ΑA,
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                                                                                                                                                                                                                                                                                                                                                                                      156 H
32 H
120 H
17303 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              THIS PROTEIN BINDS HEPARIN MORE
                                                                                                                                                                                                                                                                                              91.7%;
92.5%;
                                                                                                                                                                                                                                                                                                                                                                                      HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
7E655FCC49BF1209 CI
                                                                                                                                                                                                                                                                                              Score 719.5; DB 1 Pred. No. 1.2e-68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        BY SIMILARITY.
HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         156
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                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                 Length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Euteleostomi; Monodelphis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fibroblast
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                                                                                                                                                                                                                                                                      <u>ب</u>
                                                                                                                                                                                                                                                                      Gaps
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Heparin-binding growth factor 2 precursor (HBGF-2) (Basic growth factor) (BFGF).
FGF2 OR FGF-2.
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01-OCT-1989
                                                                                                                                                                                                                           ProDom; PD000831; HBGF_FGF; SMART; SM00442; FGF; 1. PROSITE; PS00247; HBGF_FGF;
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PIR; A40117; A40117.
HSSP; P09038; 1BFF.
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"The presence of fibroblast growth 
as a natural mesoderm inducer."; 
Science 242:1053-1056(1988).
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InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
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"Synergistic induction of mesoderm by identification of an mRNA coding for I
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 GVVSIKGITANRYLAMKEDGRLTSLRCITDECFFFERLEANNYNTYRSRKYSSWYVALKR
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PD000831; HBGF_FG
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MISSING (IN REF. 2).
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01-FEB-1994 (Rel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM
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Cell. Blochem. 43:17-26(1990).
Cell. Blochem. 43:17-26(1990).
CPUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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; Sciurognathi; Muridae;
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HEPARIN (POTENTIAL).
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Heparin-binding
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Brain stem;
MEDLINE-90265618; PubMed-1693186;
Chiu I.M., Wang W.P., Lehtoma K.;
"Alternative splicing generates two
heparin-binding growth factor 1.";
Oncogene 5:755-762(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-Brain stem;

MEDLINE-89343957; PubMed=2474753;

Wang W.P., Lehtoma K., Varban M.L., Krishnan I.,

"Cloning of the gene coding for human class 1 he
factor and its expression in fetal tissues.";

Mol. Cell. Biol. 9:2387-2395(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIINE=86261805; PubMed=3523756;
Jaye M., Howk R., Burgess W., Ricca G.A., Chiu I.-M.,
O'Brien S.J., Modi W.S., Maciag T., Drohan W.N.;
"Human endothelial cell growth factor: cloning, nucleo
and Chromosome localization.";
Science 233:541-545(1986).
MEDIINE=90365758; PubMed=2393407;
CrumLey G., Dionne C.A., Jaye M.;
"The gene for human acidic fibroblast growth factor encodes two
upstream exons alternatively spliced to the first coding exon.";
Biochem. Biophys. Res. Commun. 171:7-13(1990).
                                                                                                                                                                                                                                                                                                                         MEDLINE=92019819; PubMed=1717925; Wang W.P., Quick D., Balcerzak S.P., Needleman S.W., Chiu I.M.; "Cloning and sequence analysis of the human acidic fibroblast growth factor gene and its preservation in leukemia patients."; Oncogene 6:1521-1529(1991).
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MEDLINE-94069734; PubMed-7504343;
Zhao X.M., Yeoh T.K., Hiebert M., Fri
"The expression of acidic fibroblast
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Mammalia; Eutheria;
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ding growth factor 1 precursor (HBGF-1) (
or) (AFGF) (Beta-endothelial cell growth
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MEDLINB-86296647; PubMed-2427112;

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J. Wol. Biol. 281:899-915(1998),
J. FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENI IN YIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPE VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AN CONCENTRATION OF THESE 2 GROWTH FACTORS.
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human brain: acidic and basic fibroblast (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Human brain-derived acidic and basic fibroblast growth factors: amino terminal sequences and specific mitogenic activities."; Piochem. Biophys. Res. Commun. 135:541-548(1986).
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Gautschi-Sova P.,
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MEDLINE=86295741; PubMed=Gimenez-Gallego G., Conn
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Pineda-Lucena A., Jimenez M.A., L
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Conn G., Hatcher V
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"Endothelial cell growth factors in embryonic and adult chick brare related to human acidic fibroblast growth factor.";
EMBO J. 7:959-962(1988).
-i- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC-
IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES
VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CONCENTRATION OF THESE 2 GROWTH FACTORS.
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-!- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS
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ProDom; PD000831; HBGF_FC
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  62
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MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright.
een the Swiss Institute of Bio
                                                                  ALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERG
  VVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYT--SWYVALK 119
                                                                                                                                                                                                                                                                                                                                                                        SM00442; FGF; 1.
E; PS00247; HBGF FOT
factor
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                                                                                                                                 l Similarity
78; Conser
                                                                                                                                                                                                                                                                                                                                                                      factor;
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22
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113
155
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                                                                                                                                                                                                                          ; Mitogen; ; 15 1 15 5 6 155 2 155 2 155 1 28 1 116 AA; 17322 b
                                              LPLGNYKKPKLLYCSNGGHFLRILPDGKVDGTRDRSDQHIQLQLSAEDVG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              license agreement (See http://www.isb-sib.ch/announce/
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                                                                                                                                                  48.9%;
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                                                                                                                                                                                                                                                                                                                                                                    Angiogenesis; Heparin-binding
                                                                                                                                                                                                                                           WW;
                                                                                                                                 20;
                                                                                                                          Score 383.5;
Pred. No. 2.4e
20; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      is not removed.
                                                                                                                                                                                                                                     HEPARIN-BINDING GROWTH FACTOR 1.
ENDOTHELIAL CELL GROWTH FACTOR A
HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
; 8EDB70545E2B4365 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ght. It is produced through Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rons express the acidic fibroblast
neural development.";
                                                                                                                                                     383.5;
No. 2.
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                                                                                                                                                     ; DB 1;
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idae; Phasianinae;
                                                                                                                                                                                                                                                                                                            FACTOR ALPHA
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RESULT
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01-JUL-1989 (Rel. 11, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HB
growth factor) (AFGF).
FGF1 OR FGFA.
Mus musculus (Mouse), and
                                                                                                                                                        MOUSE
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-90201563; PubMed-2318343;
Hebbert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.;
Misolation of cDNAs encoding four mouse FGF family members and
characterization of their expression patterns during embryogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10090, 10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P10935;
01-JUL-1989
                                                                                        the
                                                                                                     between
                                                                                                                This
                                                                                                                                                                                                                                        Chiu I.M.;
                                                                                                                                                                                                                                                               SPECIES=Mouse; STRAIN=BALB/C; MEDLINE=97094746; pubMed=8939980;
                                                                                                                                                                                                                                                                                                         Madiai F., Hackshaw K.V., Chiu I. "Cloning and characterization of Gene 179:231-236(1996).
                                                                                                                                                                                                                                                                                                                                          SPECIES=Mouse;
MEDLINE=97128312;
                                                                                                                                                                                                                                                                                                                                                                                         Dev.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Goodrich S.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FGF1_MOUSE
                                           entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                SPECIES=Mouse
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                                                                                                                                                                                                                           "Characterization of the 1B
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                                                                                       ween the Swiss Institute of Bioinfi
European Bioinformatics Institute
                                                                                                                                    SUBUNIT: MONOMER.
SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RTGQYKLGSKTGPGQKAILFLPM 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EVYIKSTASGQYLAMDTNGLLYGSQLPGEECLFLERLEENHYNTYISKKHADKNWFVGLK 127
                                                                                                                                                                                                                                                   K.Y., Frostholm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleotide sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KNGNSKLGPRTHYGQKAILFLPL
                                                                                                  SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the En
X14232;
M30641;
U36459;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Acids Res.
                                                    non-profit institutions as long as its content and this statement is not removed. Usage by an requires a license agreement (See http://www.isb-
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; CAA32448.1; -.
; AAA37618.1; -.
; AAC52969.1; -.
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                                                                                                                                                                                                                                                                                                                                             PubMed-8972905;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17:2867-2867(1989)
                                                                                                                                                                                                                                                   A., Hackshaw K.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bahrenburg K.; Mansson P
se of rat heparin binding
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                                                                                                                                                                                                                                                                                                                      .M.;
                                                                                                                                                                                                                               of fibroblast
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                                                                                         There are no restrictions
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                                                        http://www.isb-sib.
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                                                                                                                                                                                                                 last growth factor
mouse brain.";
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Murinae; Mus
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RESULT 1
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Best Loc
Matches
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BINDING
SEQUENCE
                                                                                                                                     MEDLINE-92062117; PubMed=1719973; Schmidt M., Sharma H.S., Schott R.J., Schaper W.; Schmidt M., Sharma H.S., Schott R.J., Schaper W.; "Amplification and sequencing of mRNA encoding acidic growth factor (aFGF) from porcine heart."; Biochem. Biophys. Res. Commun. 180:853-859(1991).
                                                                                                                                                                                                                                                                                                          01-FEB-1991 (Rel. 17, Created)
01-FEB-1996 (Rel. 3, Last sequence update)
01-FBB-1996 (Rel. 3, Last annotation update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor I precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Alpha-endothelial cell growth factor)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                              MEDLINE-89231704; PubMed-2714282;
Quinkler W., Maasberg M., Bernotat-Danielowski
Sharma H.S., Schaper W.;
                                                                                                                                                                                                                                                 Sus scrofa (Pig).
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
Growth factor; Mitogen; Angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR; S04147; S04147.
PIR; D37360; D37360.
                                                                                                                                                                                                                             NCBI_TaxID=9823;
[1]
                                                                                                                                                                                                                                                                                      (Fragment). FGF1 OR FGF-1
                                                                                                                                                                                                                                                                                                                                                            P20002;
01-FEB-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MGD; MGI:95515; Fgf1.
                                                       canine hearts.";
                                                                  "Isolation of heparin-binding
                                                                                                                  SEQUENCE OF 22-41
                                                                                                                                                                                                      TISSUE-Heart
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ine hearts.;
J. Biochem. 181:67-73(1989).
J. Biochem. 181:67-73(1989).
FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGE FUNCTION: AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TY IN VIVO AND ARE POTENTENCES IN THE TISSUE DISTRIBUTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                HYGQKAILFLPLPVSS
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U36458;
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75; Conser
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PD000831; HBGF_FC
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AAC52907.1;
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28
116
17418
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     48.7%;
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Pred.
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HEPARIN (POTENTIAL).
; 8880E4FF0FBA4161 CRC64;
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                                                                  growth
                                                                                                                                                                                                                                                                                                                                                                                    PRT;
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No. 3.
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CELL TYPES
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_BOVIN STANDARD; PRT; 155 AA.
FGF1_BOVIN STANDARD; PRT; 155 AA.
F03968;
23-CCT-1986 (Rel. 02, Created)
01-MAR-1989 (Rel. 10, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
01-MAR-2002 (Rel. 41, Last annotation update)
101-MAR-2002 (Rel. 41, Last annotation update)
101-MAR-2002 (Rel. 41, Last annotation update)
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SEQUENCE
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Pfam; PF00167; FGF; 1.
ProDom; PD000831; HBGF_FGF; 1
                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniai
Mammalia; Eutheria; Cetartiodactyla;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS002
Growth factor;
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MEDLINE=89083506; PubMed=3205724;
Halley C., Courtois Y., Laurent M.;
                                                          SEQUENCE FROM
TISSUE=Retina;
                                                                                                                                                     Bovidae; Bovinae;
NCBI_TaxID=9913;
                                                                                                                                                                                         Mammalia; Eutheria;
Bovidae; Bovinae; B
                                                                                                                                                                                                                                                                                 Bos taurus (Bovine)
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MISCELLANEOUS: THIS PROTEIN BINDS HEPAR
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#BGF_FGF; 1.

#BGF_FGF; 1.

247; #BGF_FGF; 1.

247; #BGF_FGF; 1.

31; Mitogen; Angiogenesis; Her

16 >152 HEPARIN-

22 >152 ENDOTF'

24 28 HEPA'

113 116 HF'

31 31 '
39 152

171'
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56.18;
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HEPARIN (POTENTIAL).
C -> S (IN REF. 2).
R -> Y (IN REF. 2).
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Pred. No. 5.
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minantia; Pecora;
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.6e-33;
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^∩R ALPHA.
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expression FEBS Lett. [3]
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[9]
SEQUENCE OF 1-18 FROM N.A.
Philippe J.M., Renaud F., De
                                                                                                                                                                                                                                                                                                                        EMBO [7]
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Sharma H.S., Schaper W.;
"Isolation of heparin-binding growth
canine hearts.";
                                                                                                                                                                                                                                                                                                                                                                                                                                     Gimenez-Gallego G., Ro
Disalvo J., Thomas K.;
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[2]
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                                                                                                                    rnllippe J.M., Renaud F. Submitted (JUL-1992) to
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Abraham J.A., Mergia A., Whang J.L., Tumolo A.,
Hjerrild K.A., Gospodarowicz D., Fiddes J.C.;
"Nucleotide sequence of a bovine clone encoding
"Nucleotide sequence of a bovine clone encoding
protein, basic fibroblast growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 16-44,
                                                                                                                                                                                                                                                                                                                                                                                                       sequence and homologies.";
Science 230:1385-1388(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 16-155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochemistry 25:4988-4993(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Complete primary structure of prostatropin,
cell growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Crabb J.W., Armes L.G., Carr
Bordoli R.S., McKeehan W.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-89078619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Retina;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM
                               Science 251:90-93(1991)
                                                            "Three-dimensional
                                                                                                                                                                                                                   MEDLINE-89231704;
                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                  Science 233:545-548(1986).
                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-86055750;
                                                                                                                                                                                                                                                                                                                                                                                                                    "Brain-derived acidic fibroblast growth factor: complete amino sequence and homologies.";
                                                                                                                                                                                                                                                                                                                                                                                                                                    Disalvo J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-86070224;
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MEDLINE=87016918;
                                                                                                     X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
                                                  factors.
NCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIGENIC VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES TRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND NCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                  Biochem. 181:67-73(1989).
                                                                                                                                                                                                                              OF 16-45.
                                                                                                                                                                                                                                                                                                             OF 16-56 FROM N.A.
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                                                                                                                                                                                                                    PubMed=2714282;
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                                                                                                                                                                                                                                                                                                                                                                         PubMed=4065099
                                                             structures
                                                                                                                                                                                                                                                                                                                                                                                  AND COMPOSITION
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                                                                                                                         Desset S., Laurent 1
ne EMBL/GenBank/DDBJ
                                                                                                                                                                                                         Bernotat-Danielowski S.,
                                                             of acidic
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                                                                                                                Laurent M.;
"''nDBJ databases
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with
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use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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1BAR; 31-OCT-93.
1APC; 31-OCT-93. factor; PS00247; GKBOA AAA30516.1; CAA31610.1; CAA32192.1; AAA30517.1; CAA47063.1; AAA30563.1; AAA30564.1; Mitogen; HBGF_FGF; HBGF_FGF; L1HBGF 155 155 155 Angiogenesis; Heparin-binding;

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Euteleostomi;

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PTRROBLAST GROWTH FACTOR 2.
                                                          01-NOV-1996 (TIEMBLIEL. 01, Created)
01-MAY-2000 (TIEMBLIEL. 13, Last sequence update)
01-JUN-2001 (TIEMBLIEL. 17, Last annotation update)
FIBROBLAST GROWTH FACTOR 2 (FGF-2) (FIBROBLAST GROWTH FACTOR, BA
(BFGF) (HEPARIN-BINDING GROWTH FACTOR 2) (HBGF-2) (PROSTATROPIN)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94.48;
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                                      (FRAGMENTS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 741; DB
Pred. No. 1.6e
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
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Last annotation updat
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Pred. No. 3.2e-78;
; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D6B5447137E60343 CRC64;
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                                                                                                                                                                                                                                           170
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.6e-73;
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           RA MOSCATELLIA D. JOSEPH-SILVETSUEIN J., MANEJIAS R., RIFKIN D.B.;
RT "MAY 25,000 heparin-binding protein from guinea pig brain is a high
RT "MAY 25,000 heparin-binding protein from guinea pig brain is a high
RT molecular weight form of basic fibroblast growth factor.";
RT PROC. Natl. Acad. Sci. U.S.A. 84:5778-5782(1987).
RC C. INDICTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROTROPHIC
RECC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENIC AND PATHOLOGIC
RECC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND
RESENCHYME-DERIVED CELLS: INPLICATED IN THE CHERRAL NERVOUS
RESENCHYME-DERIVED CELLS: INPLICATED IN THE CHERRAL NERVOUS
RESENCHYME-DERIVED CELLS: INPLICATED IN THE CENTRAL NERVOUS
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RESENCHYME-DERIVED CELLS: INPLICATED
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
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                                                                                                                                                                                                                                                                                                                                                  Growth factor; Mitogen; Alternative initiation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INTRODUCED FROM RESIDUES 77, 88, 93
SIMILARITY TO THE HUMAN SEQUENCE AS
PARTIAL AMINO-ACID SEQUENCING.
EMBL; L75974; AAA85394.1; ALT_FRAME.
HSSP; P09038; 1BLA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PARTIAL SEQUENCE, AND METHYLATION.
MEDLINE=91322114; PubMed=1713785;
Burgess W.H., Bizik J., Mehlman T., Quarto N., Rifkin D.B.;
"Direct evidence for methylation of arginine residues in high
molecular weight forms of basic fibroblast growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sommer A., Moscatelli D., Rifkin D.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=89273588; PubMed=2730645;
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                                                                                                                                                                                                                                                                                                                                                                                                            PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF 53-170
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                                                                                                                                                                                                                                                                                                                                                  Vascularization; Heparin-binding; Methylation; Phosphorylation;
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        CELL ATTACHMENT SITE (POTENTIAL).
CELL ATTACHMENT SITE (POTENTIAL).
HEPARIN (BY SIMILARITY).
HEPARIN (BY SIMILARITY).
                                                                                                                                                                             25 KDA BASIC FIBROBLAST
18 KDA BASIC FIBROBLAST
FOR 18 KDA FORM.
                                                                                                                                                        POLY-ALA.
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Hystricognathi; Caviidae;
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GROWTH GROWTH

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Best Local Similarity
Matches 133; Conserv
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01-NOV-1998 (TrembLrel. 08, Last sequence update)
01-NOV-1998 (TrembLrel. 17, Last sequence update)
01-JUN-2001 (TrembLrel. 17, Last annotation update)
BASIC FIBROBLAST GROWTH FACTOR (BFGF) (FGF-2) (HEPARIN-BINDING GROWTH FACTOR 2) (HBGF-2) (PROSTATROPIN) (PROSTATIC GROWTH FACTOR)
                                                                                                             PROSITE; PS00247; HBGF_FGF; 1.
Growth factor; Mitogen; Vascularization;
                                                                   Phosphorylation; Developmental protein. 0ON_TER 1 1
                                                                                                                                                            PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
                                                                                                                                                                                                                              InterPro; IPR002348;
Pfam; PF00167; FGF; 1
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Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                            ONE HEPARAN SULFATE (BY SIMILARITY).
SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 120
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Carnivora; Fissipedia; Canidae;
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91.1%;
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                                                                                                                                                                                                                                                                          HBGF_FGF.
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Pred. No. 4.4e-69;
CELL ATTACHMENT SITE (POTENTIAL).
CELL ATTACHMENT SITE (POTENTIAL).
HEPARIN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   METHYLATION (MONO- OR DI-).
METHYLATION (MONO- OR DI-).
METHYLATION (MONO- OR DI-).
PHOSPHORYLATION (BY SIMILARITY).
PHOSPHORYLATION (BY SIMILARITY).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           146
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                                                                                                                Heparin-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
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                                                                                                                                                                                                                                                                                                                                            FACTORS FAMILY
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RESULT
Q9BDX1
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Q90Y92
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Best Local S
Matches 127
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Best Local
Q9BDX1;
01-JUN-2001 (TrEM
01-JUN-2001 (TrEM
01-DEC-2001 (TrEM
BASIC FIBROBLAST (
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BINDING
MOD_RES
MOD_RES
NON_TER
                                                                                                                                                                                                                                                                                 Submitted (JUL-2001, Submitted (JUL-2001, EMBL; AB064664; BAB63249.1; -. EMBL; AB064664; BAB63249.1; -. CROHENCE 155 AA; 17278 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q90Y92
Q90Y92;
                                                                                                                                                                                                                                                                                                                                                                                         Cynops pyrrhogaster (Japanese common newt).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cyno
                                                                                                                                                                                                                                                                                                                                                                                                                          FGF-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                   01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
FIBROBLAST GROWTH FACTOR-2.
                                                        Q9BDX1
                                                                                                                                                                                                                                                                                                                          Susaki K., Nakamura "Expression of FGF2 regeneration.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=8330;
                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
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                                                                                                           130
                                                                                                                     121 TGQYKLGSKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   137
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                                                                                                                                                                                                           1 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 FKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHVKLQLQAEERGVVSIKGVCANRYLAM
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                                                                                                                                                     KEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPGQKA 136
                                                                                                           TGQYKNGSKTGAGQKAILFLPMSAKS
                                                                                                                                                                                               PALPEDGNGGTFTPGGFKEPKRLYCKNGGFFLRINSDGKVDGAREKSDSYIKLQLQAEER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKRTGQYKLGPKTGPGQKA 120
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103
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                                                       PRELIMINARY;
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85.6%;
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97.78;
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                                                                                                                                                                                                                                                 Score 667; DB 13;
Pred. No. 2.1e-65;
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Pred. No. 3.8e-67;
2; Mismatches 1
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HEPARIN
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PHOSPHORYLATION (BY SIMILARITY).
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(TrEMBLrel. 17, Created)
(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 19, Last annotation updat
BLAST GROWTH FACTOR (FRAGMENT).

update)

KW FT FT FT

FT

(Rhesus macaque).
.zoa; Chordata; Craniata; Vertebrata; Euteleostomi;
.zoa; Chordata; Craniata; Vertebrata; Euteleostomi;
.zoa; Chordata; Catarrhini; Cercopithecidae;
.p. Macaca.
4;

SITE

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                      Query Match
Best Local Similarity
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Best Local
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InterPro; IPR002348; IL1_HBGF.
Pfam; PP00167; FGF; 1.
PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
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                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

Mizuno N., Hayashi T., Kondoh H., C

"Cynops fibroblast growth factor-2.

Submitted (CCT-2000) to the EMBL/GE

EMBL; AB049625; BAB40835.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cynops pyrrhogaster (Japanese common newt).
Eukaryota; Metazoa; Chordata; Craniata; Ver
Amphibia; Batrachia; Caudata; Salamandroide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-2001 (TrEMBLrel. 17, 01-JUN-2001 (TrEMBLrel. 17, 01-DEC-2001 (TrEMBLrel. 19, FIBROBLAST GROWTH FACTOR-2 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP; P09038; 2FGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pulmonary Hypertension.";
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF251270; AAK37962.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sekhon a.... Keller J.K., Spindel E.R.;
"Alterations in Collagen and Elastin Gene Expression in Fetal
Pulmonary Vessels in Monkeys Following Prenatal Nicotine Exposure: A
Possible Role of alpha7 Nicotinic Acetylcholine Receptor in Persistent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
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InterPro; IPR002348; IL1_HBGF.
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                                                                                                                                                                           PROSITE;
                                                                                                                                                                                                                                                                                                                                                   HSSP; P09038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=8330;
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                                                                                                                                                                        PS00247; HBGF_FGF; 1.
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111 AA;
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                                                                                                                             AA;
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                                                                                                                             14244 MW;
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                              72.2%;
87.1%;
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Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
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Pred. No. 1.4e-56;
                              Score
Pred.
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                                                                                                                             5C27F41DC6E60C13 CRC64;
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                            567;
No. 1
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FIBROBLAST FGF2.

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RESULT
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     Q925A1
Q925A1;
Q925A1;
Q925A1;
O1-DEC-2001 (TrEMBLrel. 19, Cr
O1-DEC-2001 (TrEMBLrel. 19, Lr
O1-DEC-2001 (TrEMBLrel. 19, Lr
                                                                                                                                                                               Matches
                                                                                                                                                                                                 Query Match
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01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                                                                                                     NON_TER
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EMBL; AF152587; AAF73226.1; ".

HSSP; P09038; 4FGF.

Interpro; IPR002209; HBGF_FGF.

Interpro; IPR002348; IL1_HBGF.
                                                                                                                                                                                                                                                                                                                                                                                                                             BFGF.
Capreolus capreolus (Roe deer).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bummalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervoides
Cervidae; Odocoileinae; Capreolus.
                                                                                                                                                                                                                                                                PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF;
SMART; SM00442; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                    capreolus).";
                                                                                                                                                                                                                                                                                                                                                            MEDLINE=20532861; PubMed=11078967; Wagener A., Blottner S., Goritz F., "Detection of growth factors in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASIC FIBROBLAST
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                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                       PROSITE; PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                               Pfam; PF00167; FGF; 1
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(TIEMBLIE1. 19, Last annotation update)
BLAST GROWTH FACTOR (FRAGMENT).
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                                                                                                                                                                                                                                                                                                                                                                         PubMed=11078967;
ner S., Goritz F.
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98.1%;
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Last annotation update)
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RESULT
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P79706;
01-MAY-1997 (TrEMBLrel. 0
01-MAY-1997 (TrEMBLrel. 0
01-DEC-2001 (TrEMBLrel. 1
BASIC FGF (FRAGMENT).
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Eukaryota;
Mammalia; E
                                                                                                                                                                                                                                                                                                                                  "Multiple novel variants of f
expressed in mouse embryos.";
Submitted (FEB-2001) to the E
EMBL; AY027557; AAK52309.1; -
SEQUENCE 112 AA; 12725 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-DEC-2001 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
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[1]
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Mammalia; Eutheria;
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Submitted (FEB-2001) to the EMBL/GenBank/DDBJ EMBL; AY027558; AAK52310.1;
SEQUENCE 109 AA; 12388 MW; 61074ADE3303C86
                                                                                                                                                                                                                                                                                                                                                                                                          Dirks R.P., Griep
                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-FVB/N;
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93; Conser
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Rodentia;
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Rodentia;
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97.9%;
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Pred. No. 1e-4:
2; Mismatches
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Sciurognathi;
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Sciumognathi; Muridae
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; Murinae; Mus
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; Murinae; Mus
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Kaneda T.;
               InterPro;
InterPro;
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[2]
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PRINTS; PRO0262; IL1HBGF.
PRONTS; PRO00831; HBGF_FGF; 1
SMART; SM00442; FGF; 1
PROSITE; PS00247; HBGF_FGF; 1
NON_TER 1 1 1
NON_TER 101 101
SEQUENCE 101 AA; 11907 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Serial expression of the ge early Cynops gastrula."; Submitted (NOV-1996) to the EMBL; D89443; BAA13958.1; -. HSSP; P09038; 4FGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cynops pyrrhogaster (Japanese common newt). Eukaryota; Metazoa; Chordata; Craniata; Vertel Amphibia; Batrachia; Caudata; Salamandroidea; NCBI_TaxID=8330;
                            embryo.";

Development 109:387-393(1990).

EMBL; M95706; AAA48616.1; -.

EMBL; X56804; CAA40139.1; -.

HSSP; P09038; 2BFH.
                                                                                                       mitrani E., Gruenbaum Y., Shohat
"Fibroblast growth factor during
                                                                                                                                                                                  antisense mRNAs during Dev. Biol. 157:110-118
                                                                                                                                                                                              Eukaryota; Metazoa;
Archosauria; Aves; N
                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01, 01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                               Q07659;
01-NOV-1996
                                                                                                                     MEDLINE=90382254; Pubm
Mitrani E., Gruenbaum
                                                                                                                                                   SEQUENCE OF 52-85 FROM N.A
                                                                                                                                                                                                                                             SEQUENCE FROM N.A. MEDLINE=93246053; PubMed=7683281;
                                                                                                                                                                                                                                                                                                                                                       Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00167; FGF;
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                                                                                                                                                                                                                                                                                         NCBI_TaxID=9031;
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IPR002209; HBGF_FGF
IPR002348; IL1_HBGF
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                                                                                                                                                                                                                                                                                                                         Neognathae;
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87.1%;
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                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; ; Galliformes; Phasiani
                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
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.1e-44;
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                                                                                                                                                                                                                                                                                                                           Phasianinae;
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RESULT
Q9NOV2
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Best Local S
Matches 66
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Best Local S
Matches 96
                                                                                                                                                                                                                                                                                                                                                                             01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                                                                                                                            [1]
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
TISSUE-FETAL PLACENTAL ARTERY;
Theng J., Tsoi S.C., Magness R
Theng J., Tsoi S.C., Magness R
                                                                                                                                                                                                                                                                                                                                                                                                         Q9N0V2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PRO0262; ILLHBGF.
PRODOM; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
SEQUENCE 146 AA; 16182 MW;
                                                                                                                                    NON_TER
                                                                                                                                                              PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
                                                                                                                                                                                           InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                       EMBL; AF250027; AAI
HSSP; P09038; 4FGF
                                                                                                                                                                                                                                           Submitted (MAR-2000)
                                                                                                                                                                                                                                                     cells.":
                                                                                                                                                                                                                                                                                                           Mammalia; Eutheria;
Bovidae; Caprinae; (
NCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                         Ovis aries (Sheep). Eukaryota; Metazoa;
                                                                                                                                                      PROSITE; PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                            FGF-2.
                   108
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61
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                                    DPHIKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGQYKLGSKTGPGQKAILFLPMSAKS 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
SRKYSQLVCGTETNW
                   SRKY----TSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGQYKPGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                                                                                                                     FIBROBLAST
                                                                          66; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                    ) (TrEMBLrel.
) (TrEMBLrel.
[ (TrEMBLrel.
DBLAST GROWTH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                           AA;
                                                                                                                                                                                                                                 AAF65566.1;
                                                                                                                                                                                                                                                                                                                       Ovis.
                                                                                                                           8796 MW;
                                                                                                                                                                                                                                                                                                                               Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                     76
                                                                                    43.4%;
                   114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              59.7%;
75
                                                                                                                                                                                                                                          to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                               15, Created)
15, Last sequence update)
19, Last annotation update)
1 FACTOR (FRAGMENT).
                                                                          Score 341; DB Pred. No. 5.3e 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8;
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Pred.
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                                                                                                                                                                                                                                                                       R.R.;
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                                                                                    341;
No. 5.
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5.3e-30;
0;
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                                                                                                                          CRC64;
                                                                                                                                                                                                                                           databases
                                                                                             Length 76
                                                                                                                                                                                                                                                                                                                                Pecora; Bovoidea;
                                                                           Indels
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Best Local S
Matches 56
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PRELIFICATION
000527;
01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1999 (TrEMBLrel. 09, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
01-JUN-2001 (TREMBLREL 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota;
Mammalia; E
Cervidae; (
  Handschug F
"Mutations
                                                       TISSUE=BLOOD;
Handschug K., Glaeser C.;
"Polymorphism in the 5' untranslated region of
transition (79 bp upstream of the first CTG cc
Submitted (MAY-1997) to the EMBL/GenBank/DDBJ
                                                                                                                                                 Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AFGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9N1S8 PRELIMINARY; PRT; 106 AA.
Q9N1S8;
01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updata
ACIDIC FIBROBLAST GROWTH FACTOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Anim. Reprod. Sci. 64:65-75(2000).
EMBL; AF152586; AAF73225.1; -.
HSSP; P05230; 2AFG.
                       TISSUE-BLOOD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          prints; pr00262; IL1HBGF.
proDom; pD000831; HBGF_FGF;
SMART; SM00442; FGF; 1.
proSite; ps00247; HBGF_FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Detection of capreolus).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=TESTIS;
MEDLINE=20532861; PubMed=11078967;
mio+ther S., Goritz F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Capreolus
                                    SEQUENCE FROM
                                                                                                                 SEQUENCE FROM
                                                                                                                                       NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
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                                                                                                                                                                                                                                                                                                              SQTPNEECLFLERIEENHYNTYTSKKYAEKNWFVGLKKNGSSKLG
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s in
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; Metazoa; Chordata; Craniata;
Eutheria; Cetartiodactyla; Run
Odocoileinae; Capreolus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           106
106 AA;
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  Archoukieh
the 5' untr
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11931 MW;
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53.3%;
 xieh E., Glaeser
untranslated rec
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Pred. No. 1
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             C.;
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Ruminantia; Pe
                                                                                                                                                             Vertebrata;
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.9e-24;
  of.
                                                                                                                                                    Hominidae;
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                                                                     of the FGF-2 codon).";
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                                                           databases
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   FGF-2
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                                                                                                                                                              Euteleostomi;
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              score greater than or equal to the score of the result bein and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                          Score
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Match Length
          hits satisfying chosen parameters:
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2: /SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1981.DAT:*
3: /SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1982.DAT:*
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Gapop 10.0 , Gapext 0.5
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                                                                                                                                                                              AAP94()38
AAR05314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
Sequence of bovine bovine fibroblast recombinant bovine Sequence of human Human basic fibrob Human basic fibrob bFGF truncated at Human bFGF peptide Fibroblast growth Human bFGF. Homo sapie
                                                                                                                                                                                                                                                                                                                                                                                                 Description
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Extended recombina	AAR07076	11	211	98.7	817	45
Human fibroblast g	AAB50706	22	210	98.7	817	44
Human fibroblast g	AAB50299	22	210	8	817	43
Human basic fibrob	AAB60695	22	210	8	817	42
Recombinant basic	AAR06685	11	210	98.7	817	41
Human bFGF encoded	AAR05787	11	165	98.7	817	40
human fibroblast g	AAU04006	22	158	98.7	817	39
Human basic Fibrob	AAG78316	22	158	98.7	817	38 8
Human basic fibrob	AAU08594	22	158	98.7	817	37
	AAW31664	18	158	98.7	817	36
Sequence of human	AAP71085	œ	157	98.7	817	35
Human basic fibrob	AAB50274	22	155	98.7	817	34
OD.	AAB61662	22	155	98.7	817	33
Truncated form of	AAY72909	22	155	98.7	817	32
Amino acid sequenc	AAB84597	22	155	98.7	817	3
Heart muscle cell	AAG64847	22	155	98.7	817	30
	AAG64317	22	155	98.7	817	29
FGF-2 prote	AAB99918	22	155	98.7	817	28
Human fibroblast g	AAB85813	22	155	98.7	817	27
Human fibroblast g	AAE11976	22	155	98.7	817	26
Human fibroblast g	AAG65648	22	155	98.7	817	25
Human fibroblast g	AAY32334	21	155	98.7	817	24
Human FGF-2 (bFGF)	AAY90448	21	155	98.7	817	23
\mathbf{x}	AAY90411	21	155	98.7	817	22
	AAY96893	21	155	98.7	817	21
Human fibroblast g	AAY96873	21	155	98.7	817	20
Fibroblast growth	AAB10298	21	155	98.7	817	19
O	AAW99380	20	155	98.7	817	18
Fibroblast growth	AAW53023	19	155	98.7	817	17
18 kDa form of fib	AAW71379	19	155	98.7	817	16
Fibroblast growth	AAW75712	19	155	98.7	817	15
Fibronectin recept	AAY05456	19	155	98.7	817	14
Biologically activ	AAW19595	18	155	98.7	817	13
Human fibronectin	AAW33338	18	155	98.7	817	12

ALIGNMENTS

AAP70671

AAP70671 standard; Protein; 155

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Wound healing;

tissue repair;

tumour probe

18-APR-1991 AAP70671;

(first entry)

Sequence of bovine basic fibroblast growth factor (FGF).

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30-MAY-1986;
12-SEP-1985;
16-DEC-1985;
                                                                                        Peptide
Protein
WPI; 1987-093786/13.
N-PSDB; AAN71024.
                                                                                                   Key
                                                                                                             Bos taurus.
               Fiddes JC, Abraham JA;
                                                         11-SEP-1986;
                                                                             W08701728-A
                                                                   26-MAR-1987
                         (BIOT-) BIOTECHN RES PARTNE
                                    86US-0869382.
85US-0775521.
85US-0809163.
                                                         86WO-US01879
                                                                                              Location/Qualifiers 1..9
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RESULT
AAE11975
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Best Local Similarity
Matches 155; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  used to co
libraries
                                                              Treating or preventing erectile dysfunction, comprises administering growth factor, particularly fibroblast growth factor to blood vessels in the penis, groin or leg \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New DNA sequences encoding mammalian fibroblast growth useful in prodn. of pure factors for use in wound healitissue repair and of probe for tumour testing
      The present invention erectile dysfunction,
                                         Claim 6; Page 33; 35pp; English.
                                                                                                                WPI; 2001-616273/71.
N-PSDB; AAD19522.
                                                                                                                                                                                                                                 09-MAR-2001; 2001WO-US07702.
                                                                                                                                                                                                                                                                                                                                    Bovine; therapy; erectile dysfunction; fibroblast growth factor-2; FGF-2; epidermal growth factor; EGF; platelet derived growth factor; PDGF; vascular endothelial growth factor; VEGF; tissue growth factor; TGF;
                                                                                                                                                                                                                                                                                                                                                                                    Bovine fibroblast growth factor-2
                                                                                                                                                                                                                                                                                                                                                                                                            18-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAE11975 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         construction etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                  Whitehouse MJ;
                                                                                                                                                                                               10-MAR-2000; 2000US-188480P
11-MAY-2000; 2000US-203415P
                                                                                                                                                                                                                                                         20-SEP-2001
                                                                                                                                                                                                                                                                                WO200168125-A2
                                                                                                                                                                                                                                                                                                      Bos taurus
                                                                                                                                                                       (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                                                                            impotence; vasotropic
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-terminal AA sequence of both acidic and basic bovine FGF and to construct long probes to screen human and bovine genomic raries for FGF genes. Isolated sequences are used in vector struction etc. and used to transform CV-1 cells for FGF prodn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sswyvalkrtgqyklgpktgpgqkailflpmsaks
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3; 89pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein;
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       relates to comprising
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 828; DB 8;
Pred. No. 9.2e-83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
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       a method for t
administering
                                                                                                                                                                                                                                                                                                                                                                                     (FGF-2) #2.
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       treating or preventing
g a fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
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RESULT
AAW20029
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Best Local :
                                                                                                                          15-MAY-1987;
12-SEP-1985;
16-DEC-1985;
30-MAY-1986;
30-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           factor (FGF), epidermal growth factor (EGF), platelet derived growth factor (PDGF), vascular endothelial growth factor (VEGF) or tissue growth factor (TGF). The invention is used to treat or prevent erecting function, or impotence. The present sequence is a bovine FGF-2
                                                    WPI; 1997-234676/21
N-PSDB; AAT71236.
                                                                                                                                                                                                                                                              Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                   AAW20029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein.
                                                                                                                                                                                                                    US5604293-A
                                                                                                                                                                                                                                              Protein
                                                                                                                                                                                                                                                                                                           bone
                                                                                Abraham
                                                                                                                                                                                                                                                                                         Bos taurus
                                                                                                                                                                                                                                                                                                                                              Recombinant bovine basic fibroblast growth factor
                                  New high
                                                                                                  (SCIO-)
                                                                                                                                                                                 12-SEP-1985;
                                                                                                                                                                                                  18-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                18-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                               121
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                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                         high purity, recombinant human basic fibroblast growth factor promoting wound healing and treating neuro:degenerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fracture;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                JA,
                                                                                                  SCIOS
                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                ting wound healing and treating suitable for production on large
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    155
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                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                Fiddes
                                                                                                  INC
                                                                                                                                             87US-0050706.
85US-0775521.
85US-0809163.
                                                                                                                            86US-0869382
92US-0860688
                                                                                                                                                                                 85US-0775521
                                                                                                                                                                                                                                                                                                           biologically active; embolism
                                                                                                                                                                                                                                              /label-
10..155
                                                                                                                                                                                                                                                                                                                            growth factor; basic;
                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                      /label=
                                                                                                                                                                                                                                                                                                                     disease; Parkinson's;
                                                                                                                                                                                                                                                                                                                                                                                                    Protein;
                                                                                                                                                                                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                      mat_protein
                                                                                                                                                                                                                                                      sig_peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 828; DB 22; Pred. No. 9.2e-83;
                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                 large scale
                                                                                                                                                                                                                                                                                                                    acidic; wound
s; Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
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                                                                                                                                                                                                                                                                                                                     healing;
disease;
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Example 5;

Fig

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34pp;

English

x SSSSSSSSSSX x

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RESULT
AAP70301
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Best Local :
                                                                                                                                                                                                                    29-SEP-1986;
14-MAR-1986;
09-APR-1986;
                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide
Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW20029 is a recombinant bovine basic fibroblast growth factor (bFGF). Recombinant bFGF is used to promote healing of wounds, bone fractures, damaged myocardial tissue etc. and, since it increases neuronal survival and promotes neurite outgrowth, may also be used in treatment of neurological disorders such as Alzheimer's and Parkinson's diseases. bFGF may also be used for detection of specific inhibitors; for treatment of cell cultures in vitro before transplant and for inducing release of tissue plasminogen activator or collagenase, e.g. for treatment of a chronic tendency to form embolism. Recombinant bFGF can be produced on a large cell.
Human basic fibroblast growth factor - produced by recombinant DNA techniques, useful for healing wounds, prophylaxis, thrombosis and arteriosclerosis treatment, etc.
                                                                                                                               Kurokawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAP70301 standard;
                                                                           N-PSDB;
                                                                                                                                                                                                                                                                                           12-MAR-1987;
                                                                                                                                                                                                                                                                                                                               23-SEP-1987
                                                                                                                                                                                                                                                                                                                                                                EP237966-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
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                                                                                                                                                                 (TAKE ) TAKEDA CHEMICAL
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                                                                         1987-265363/38.
DB; AAN70494.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                             Sasada
                                                                                                                                                                                                   86JP-0231428.
86JP-0057919.
86JP-0082699.
86JP-0241053.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             basic fibroblast growth factor (hbFGF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein;
                                                                                                                             χ,
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                                                                                                                                                                                                                                                                                                                                                                                                    "claimed"
                                                                                                                                                                 UNI
                                                                                                                             Iwane
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mesoderm cell growth promoter;
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Pred. No. 2e-82;
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                                                                                                                           Igarashi
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                                                                                                                             <u>~</u>
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RESULT
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Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IMR90 human fibroblasts. hbFGF promotes growth of fibroblasts and other mesoderm-derived cells and is useful for promoting healing wounds (eg burns), for prophylaxis and treatment of thrombosis an arteriosclerosis, and as a promoter for cell culture.
                                                                                                                                                                                                                                                                  Human basic fibroblast growth factor.
                                                                                                                                                                                                                                                                                                              AAP94038 standard;
                             07-JUL-1987;
                                            06-JUL-1988;
                                                                                               Domain
                                                                                                                     Misc-difference
                                                                                                                                            Misc-difference
                                                                                                                                                                  Misc-difference
                                                                                                                                                                                        Misc-difference
                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                      Key
                                                                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                                    Basic
                                                                                                                                                                                                                                                                                25-JUN-1990
                                                                                                                                                                                                                                                                                               AAP94038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Fig 1;
             (BIOT-) BIOTECHN RES ASSOC
                                                           11-JAN-1989
                                                                         EP298723-A.
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                                                                                                                                                                                                                                                                                                                                                                                               61
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                                                                                                                                                                                                                                                                                                                                                                                KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                   fibroblast
JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155 AA;
Abraham JA,
                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                (first
                             87US-0070797
                                            88EP-0306158
                                                                                                                                            /note="replaced
                                                                                                                                                                                                              Location/Qualifiers 78
                                                                                        /label=heparin-binding
                                                                                               128..138
                                                                                                      'note="replaced
                                                                                                              ′label=Lys
                                                                                                                            note="replaced
                                                                                                                                    /label=Arg
                                                                                                                                                                         note="replaced"
                                                                                                                                                                                'label=Cys
                                                                                                                                                                                               /note="replaced
                                                                                                                                                                                                       /label=Cys
                                                                                                                                                                                                                                                   growth
                                                                                                                                                           'label=Lys
                                                                                                                                                                                                                                                                                                              protein; 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38pp; English
                                                                                                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   98.7%;
98.7%;
                                                                                                                                                                                                                                                   factor; pUC9-TSF11;
Protter A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 817; DB 8; Pred. No. 1.5e-81;
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                                                                                                                            bу
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                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
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                                                                                                                                                                                                                                                                                                              AA
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C
                                                                                                                                                                         ဝူ
                                                                                                                                                                                                Ala"
                                                                                                                                                                                                                                                   pUC9delH3-pTSF-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38 or
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and
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RESULT
AAR05314
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA encoding the sequence may be mutated to encode an analogue, of human basic fibroblast growth factor (bFGF) bFGF-C78/965, which has reduced affinity for heparin. One or more positively-charged AAs in the heparin-binding domain (AAs 128-138) are replaced by neutral or negatively-charged residues as indicated in the feature table. A recombinant vector (pUC9-TSF11 or pUC9delH3-pTSF-3) contg. the mutated DNA can be used to transform bacterial or mammalian host cells for prodn. of the analogue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Recombinant DNA encoding new fibroblast growth factor analogues - useful eg for accelerating wound healing to control neovascularisation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; d 1-2; 44pp;
         Disclosure;
                             yeast prodn. of human basic and acidic fibroblast growth factor
with acetylated amino-terminal, useful eg. for treating cell
senescence, neuronal regression and cell death.
                                                                                                                                               04-NOV-1988;
                                                                                                                                                                                                                                                      Fibroblast
                                                                                                                                                                                                                                                                           Human basic fibroblast growth factor (FGF).
                                                                                                                                                                                                                                                                                                                                         AAR05314 standard;
                                                                        N-PSDB;
                                                                                 WPI; 1990-178825/23
                                                                                                       Barr PJ;
                                                                                                                                                                     03 · NOV - 1989;
                                                                                                                                                                                        17-MAY-1990
                                                                                                                                                                                                             WO9005184-A
                                                                                                                                                                                                                                                                                                10-OCT-1990
                                                                                                                          (CHIR-) CHIRON CORP
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DB; AAN93087.
                                                                                                                                                                                                                                                                                                                                                                                           SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                       AAQ04716.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           155 AA;
                                                                                                                                                                                                                                                      growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                (first entry)
         p; English
                                                                                                                                               88US-0267408
                                                                                                                                                                     89WO-0004821
                                                                                                                                                                                                                                                      factor; FGF; yeast; ischaemia;
                                                                                                                                                                                                                                                                                                                                         protein; 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98.7%;
98.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 817; DB 10;
Pred. No. 1.5e-81;
1; Mismatches 1.
                                                                                                                                                                                                                                                                                                                                           A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
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RESULT
AAR22232
ID AAR2
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$$888$
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FGF have applications such as in vivo nerve regeneration, repair ischaemia and corneal repair. They may also have tuses in the CNS and PNS in treatment of cell death and ne
The peptide sequence was deduced from the synthetic DNA sequence prepd. as described in EP-363875. E. coll cells transformed with t synthetic DNA were lysed and the supernatent purified, giving a 50:50 mixture of a 154 residue bFGF (2-155) having the amino acid sequence of the 155 residue form (Abraham et al., Science, 23, 545, 1986) shown here but without the N-terminal Met; and a 153 residue bFGF (3-155). An adduct of bFGF formed with heparin or heperan sulphate contg. the bFGF 9-10 Leu-Pro bond can be cleaved with pepsin A or cathepsin D to cleave this bond and release a peptide with the N-terminus be deleted up to and including residue 9, sequentially. This cleavage method can be used to obtain a pure form of the 146 amino acid bFGF (10-155) bFGF. The prod. can be us
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             reggression
                                                                                                                                                                                                                       Prepn. of basic fibroblast growth factor - by
heparin or heparan sulphate and cleaning with
                                                                                                                                                                                                                                                                 WPI; 1992-080021/10.
                                                                                                                                                                                                                                                                                            Monsan P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Basic fibroblast growth factor; adduct; heparin; heperan sulphate; pepsin A; cathepsin D; wounds; burns
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR22232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR22232 standard;
                                                                                                                                                                                  Claim
                                                                                                                                                                                                            cathepsin D
                                                                                                                                                                                                                                                                                                                       (FARM ) FARMITALIA C ERBA SRL.
                                                                                                                                                                                                                                                                                                                                                  02-AUG-1990;
                                                                                                                                                                                                                                                                                                                                                                             30-JUL-1991;
                                                                                                                                                                                                                                                                                                                                                                                                         20-FEB-1992.
                                                                                                                                                                                                                                                                                                                                                                                                                                    WO9202539-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pepsin A;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        {\tt 1} \verb| maagsittlpalpedggsgafppghfkdpkrlycknggfflrlhpdgrvdgvreksdphi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
:|||||||||||||||
tswyvalkrtgqyklgsktgpgqkailflpmsaks
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 truncated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   153;
                                                                                                                                                                                 4; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cathepsin
                                                                                                                                                                                                                                                                                            Paul F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                  27;
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                                                                                                                                                                                                                                                                                                                                                  90GB-0017008
                                                                                                                                                                                                                                                                                                                                                                             91WO-EP01428
                                                                                                                                                                                 36pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein;
                                                                                                                                                                                                                                                                                             Betbeder D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98.7%;
98.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-terminus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155
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Pred. No. 1
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.5e-81;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155
                                                                                                                                                                                                                                                                                               Ъ,
                                                                                                                                                                                                                          pepsin A or
                                                                                                                                                                                                                                         forming adduct with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
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                                                                                                     545-
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Best Local Similarity
                                                                            Matches
                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                             contg.
growth
                                                                                                                                                                                                                                                 The sequences given in AAR40158-63 represent human fibronectin (FN and fibroblast cell growth factor (FFGF) fragments which were used the production of fusion polypeptides which are able to stimulate cell adhesion and cell growth. These fusion peptides may be used for anti-aging cosmetics and in wound healing after surgery.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; fibronectin; FN; fibroblast cell growth factor; FGF; fusion; cell adhesion; cell growth; anti-aging; cosmetics;
                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 7; 13pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic functional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; AAQ46943.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1993-261656/33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TAKI ) TAKARA SHUZO CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-OCT-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-JUL-1993
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-FEB-1994 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR40159 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 SSWYVALKRTGQYKLGPKTGPGQKAILFLEMSAKS 155
                                                                                                    Local Similarity
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e also AAR22233.
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                          1 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI
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cell adhesion polypeptide to promote wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                             factor polypeptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide
                                                                                                                                                                                                         155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155 AA;
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                                                                            Conservative
                                                                                                                                                                                                         ₽
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fragment #1.
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                                                                                                  98.78;
98.78;
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Pred. No. 1
                                                                                               Score 817; DB 14;
Pred. No. 1.5e-81;
                                                                            Mismatches
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L.5e-81;
                                                                                                                          DB 14;
                                                                                                                          Length 155;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     healing, etc.
and fibroblast
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RESULT
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                           availability of the TA. The conjugates of the invention are used to inhibit cell proliferation in cells carrying the particular growth factor receptor; also when TA is DNA it can be used to deliver this to cells (for gene therapy). A specific application is to prevent excessive proliferation of epithelial cells, fibroblasts and keratinocytes in the anterior eye after surgery, partic to prevent recurrence of pterygii after surgical removal, closure of trabeculectomy after glaucoma surgery and corneal clouding after excimer laser treatment. Other conditions which may be treated inclu tumours, restenosis, psoriasis, Dupuytren's contracture, diabetic complications, Kaposi's sarcoma and rheumatoid arthritis.
                                                                                                                                                                                                           AAR80776-84 are fibroblast growth factors (FGF) FGF-1 to FGF-9 respectively. DNA encoding these fibroblast growth factors can be used to create an FGF/saporin fusion protein. DNA encoding such fusi proteins are useful for targetting saporin (a cytotoxin) to a cell carrying the FGF receptor. Targetted agents (TA) other than saporin which may be used include in partic. DNA encoding a therapeutic protantisense DNA or other cytotoxic agent. The linker sequence within t fusion protein may increases serum stability or intracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conjugate; fibroblast growth factor; FGF; cytotoxin; saporin; eye; cell proliferation; regulation; pterygia; corneal clouding; cancer; psoriasis; rheumatoid arthritis.
                                                                                                                                                                                                                                                                                                                                                                                              New conjugates of growth factor receptor ligand and targetted agent - partic. DNA or cytotoxin, used to control cell proliferation in the eye, e.g. to prevent growth of pterygii and corneal clouding
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Baird JA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-MAR-1994;
15-MAR-1994;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (PRIZ-) PRIZM PHARM INC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR80777 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    {\tt maagsittlpalpedggsgafppghfkdpkrlycknggfflrihpdgrvdgvreksdphi}
                                                                                                                                                                                                                                                                                                                                                                   Page 141;
   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Houston LL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     growth factor 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
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94US-0213446.
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Query Match Best Local Similarity

98.7%; 98.7%;

Score 817; DB 16; Pred. No. 1.5e-81;

Length 155;

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RESULT
AAR70204
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                                                                                                                                                                                                                                                                                                                                                Growth and/or proliferation of neuronal precursor cells in an animal is obtained by admin. of a proliferation factor comprising at least a portion of a growth factor, e.g. human basic fibroblast growth factor, whose sequence is given in AAR70204 and gene in AAQ83522.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig.1; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Basic fibroblast growth factor; bFGF; neuronal precursor cell; neurological
                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Black IB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR70204 standard; Protein; 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New conjugates for crossing the bloa neurological agent linked to a treat to a portion of a growth factor
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22-DEC-1993;
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121 SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS 155
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                                                                                                                      {\tt maagsittlpalpedggsgafppghfkdpkrlycknggfflrihpdgrvdgvreksdphi}
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dicicco-Bloom
                                                                                                                                                                                                                                                                                                                155 AA;
                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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93US-0171297
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                                                                                                                                                                                                                         98.7%;
98.7%;
                                                                                                                                                                                                      Score 817; DB 16;
Pred. No. 1.5e-81;
1; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the blood brain barrier - comprising to a transport factor comprising at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.
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                                                                                                                                                                                                                                               Length
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AAW33338
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Best L
                                                        AAW33338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel fusion proteins comprise FGF linked to saporin. FGF-1 t may be used, pref. muteins in which at least 1 Cys residue is replaced by conservative Ser substitutions. The fusion protei are potent cytocidal agents to cells bearing the FGF receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New monogenous preparations of cytotoxic conjugates and contain fibroblast growth factors and cytotoxic agents i treating FGF conditions such as tumours, diabetes and rh
                 AAW33338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-AUG-1993;
29-OCT-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
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saporin; cytostatic; tumor; diabetes; rheumatoid arthritis.
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                                                          standard;
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                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
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93US-0145829
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                                                        protein;
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98.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                               Score 817; DB 16;
Pred. No. 1.5e-81;
1; Mismatches 1;
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(first entry)

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RESULT 1
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DT 18-9
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KW FGF:
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Best Local
                                                                                                                                                                                                                                                                                                                          Matches 153;
                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is a human fibronectin amino-terminal oligopeptide, which was used in the development of a novel method for increasing the efficiency of gene introduction into a target cell using a retroviral vector. The method comprises carrying out viral infection of the target cell in the presence of a retrovirus and target cell binding substance or substances. The method can be used to effectively introduce genes into target cells for the gene therapy of cancer and viral diseases, e.g. AIDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              substance which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Amino-terminal; human fibronectin; target cell; transfection; retroviral vector; gene therapy; cancer; viral disease; acquired immunodeficiency syndrome; AIDS.
 FGF; fibroblast growth factor; basic; acidic; wound healing;
                         Biologically active recombinant basic fibroblast growth factor
                                                    18-SEP-1997
                                                                                                     AAW19595 standard;
                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Asada K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-MAR-1996;
13-NOV-1995;
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                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                Н
                                                                                                                                                                                                                                KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFFRLESNNYNTYRSRKY 120
                                                                                                                                                                                                                                                                    {\tt MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1997-289294/26
                                                                                                                                                                                                                   klqlqaeergvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrky
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for increasing efficacy of gene transfer to target cell using irus - by infection of the target cell in the presence of a nce which binds to the virus and a substance which binds to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hashino K,
                                                                                                                                                                                                                                                                                                                                                                                       155 AA;
                                                                                                                                                                                                                                                                                                                          Conservative
                                                  (first entry)
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95JP-0294382.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96WO-JP03254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93-94; 194pp; Japanese.
                                                                                                     Protein;
                                                                                                                                                                                                                                                                                                                                   98.78;
98.78;
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                                                                                                                                                                                                                                                                                                                      Pred. No. 1.
1; Mismatche
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                                                                                                                                                                                                                                                                                                                                   DB 18;
.5e-81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Uemori T;
                                                                                                                                                                                                                                                                                                                                              Length 155;
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Best Local Similarity
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12-SEP-1985;
16-DEC-1985;
30-MAY-1986;
30-MAR-1992;
01-APR-1994;
                                                                                                                                                                                                                                                           Recombinant bFGF is used to promote healing of wounds, bone fractures, damaged myocardial tissue etc. and, since it increases neuronal survival and promotes neurite outgrowth, may also be used in treatment of neurological disorders such as Alzheimer's and Parkinson's diseases. bFGF may also be used for detection of specific inhibitors; for treatment of cell cultures in vitro before transplant and for inducing release of tissue plasminogen activator or collagenase, e.g. for treatment of a chronic tendency to form embolism. Recombinant bFGF can be produced on a
                                                                                                                                                                                                                                                                                                                                                                 AAW19595 is a biologically active recombinant human basic fibroblast growth factor (bFGF). The protein is free from all infectious impurities, substances that normally accompany it and from post-translational modification of Cys residues of native human bFGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     neurodegenerative disease; Parkinson's; Alzheimer's disease; bone fracture; biologically active; embolism.
                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 2; Fig 4; 34pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              diseases, suitable for production on large scale
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1997-234676/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Abraham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-SEP-1985;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New high purity, recombinant human basic fibroblast growth factor for promoting wound healing and treating neuro degenerative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-FEB-1997.
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    121
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                            121
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                                                                                                    SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
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tswyvalkrtgqyklgsktgpgqkailflpmsaks
                                                   KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SCIOS
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                                                                                                                                                         Conservative
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85US-0775521.
85US-0809163.
85US-0869382.
92US-0860688.
94US-0221462.
                                                                                                                                                                                                                         AA;
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                                                                                                                                                                      98.7%;
98.7%;
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                                                                                                                                                                      Score 817; DB 18;
Pred. No. 1.5e-81;
                                                                                                                                                         Mismatches
    155
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RESULT 14 AAY05456

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AAW75712
ID AAW7
XX
AC AAW7
AC AAW7
AC Fibr
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DE Fibr
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KW Fibr
KW bFGGW
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Best Local
                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                         This sequence represents a fibronectin receptor that can be used in the method of the invention. The method is for the control of human immunodeficiency virus (HIV) infection using a composition which comprises a functional substance which participates in the infection HIV. The method is used to control HIV-infection.
                                                        Fibroblast growth factor-2; FGF-2; basic fibroblast growth bFGF; mutein; protein engineering; heparin; thrombosis; thromocytopenia; ophthalmic disorder; human; therapy.
                                                                                                                                                               AAW75712 standard;
                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            composition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1998-163674/15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-JUL-1996;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fibronectin receptor; HIV; infection; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fibronectin
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                                                                                                  Fibroblast growth factor-2
                                                                                                                       07-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TAKI ) TAKARA SHUZO
       Peptide
                                      Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                 Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of human immunodeficiency virus infection - usition comprising replication defective HIV vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      standard;
                                                                                                                                                                                                                                                                                                                                                                                           155 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor targetting HIV strain CH-271.
                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                      (first entry)
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       Location/Qualifiers 1..9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein;
                                                                                                                                                               Protein; 155
                                                                                                                                                                                                                                                                                                                                                  98.7%;
98.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CIL
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Pred. No. 1.5e-81;
1; Mismatches 1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fibroblast growth factor mutein and DNA - having reduced receptor binding and able to bind heparin, useful for treating and regulating heparin-related disorders e.g. thrombosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein
                                                                                                                                                                                                                                                         in host cells. The FGF muteins are used to treat heparin-related disorders, such as excessive bleeding induced by heparin, ophthalmic disorders and heparin-associated thrombocytopenia, and thrombosis. They may also be used for drug design, especially
                                                                                                                                                                                                                                                                                                                    Cys-78 and Cys-96 residues to reduce aggregation. The mutein is obtained by site-specific or site-directed mutagenesis of FGF-2 DNA, incorporation of the mutated DNA into a vector and expression in host cells. The FGF muteins are used to treat heparin-related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-MAR-1997;
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                                                                                                                                                                                            Sequence
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                                                                                                                                                                                                                                     FGF-2 antagonists
1998-495843/42.
                                                                                                         Similarity
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                                                                                       Conservative
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/note= "amino acid residues
10..155
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/note= "amino acid residues +1
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98.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "phe-95 is replaced by another amino ac acid (Claim 3), preferably Ala, Phe, SGLY, Met, Leu or Tyr, especially Ala, or Ser"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Asn-104 may
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                                                                                                           Score 817; DB 19;
Pred. No. 1.5e-81;
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                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                be replaced by another amino
1), preferably Ala, Phe, Ser,
eu or Tyr, especially Ala, Gly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        replaced by another amino
), preferably Ala, Gly or :
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                                            Searched:
                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                   June 7, 2002, 14:37:15; Search time 47.03 Seconds (without alignments) 316.688 Million cell updates/sec
                                                                                                                                      US-09-802-365-6
828
1 MAAGSITTLPALPEDGGSGA......GPKTGPGQKAILFLPMSAKS 155
                                        283138 seqs, 96089334 residues
                                                                                 BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                           GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
      283138
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Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Database :

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

PIR_71:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	80	7	6	₅	4	ω	2	_	No.	Result	
238.5	241	244.5	245	245	249	250.5	250.5	252	252.5	262	402.5	404.5	412.5	413.5	413.5	418.5	419.5	427.5	466.5	685	736	758.5	770	781	781.5	796.5	817	828	Score		
28.8	9	9	9	29.6	0	0		0		31.6	8	٠		9.		0	0		σ.	82.7	8	1.	ω	94.3	94.4	٠	98.7	100.0		Query	œ
202]	267 1							256 2		194 2									125 2				189 2						Length DB		· \
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45	44	4 3	42	41	40	39	38	37	36	35	34	33	32	31	30
202.5	202.5	202.5	203	204.5	205.5	206.5	207	209	216	216	231.5	234	235	235.5	236
24.5	24.5	24.5	24.5	24.7	24.8	24.9	25.0	25.2	26.1	26.1	28.0	28.3	28.4	28.4	28.5
194	194	194	212	194	207	207	208	211	208	208	192	239	245	237	187
2	N	1	N	N	Ν	N	N	N	N	N	N	-	Ľ	1	2
S49501	S26049	A36301	JC7511	I48610	JC5941	JC5940	JC7082	JC7353	A48137	S66486	S54407	S04742	TVMST2	S39582	S23595
keratinocyte growt	fibroblast growth	fibroblast growth	fibroblast growth	keratinocyte growt	fibroblast growth	fibroblast growth	fibroblast somatot	fibroblast growth	fibroblast growth	fibroblast growth	embryonic fibrobla	fibroblast growth	transforming prote	transforming prote	embryonic fibrobla

ALIGNMENTS

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A; Molecule type: pro
A; Residues: 23-35, ')
A; Experimental source
A; Experimental source
A; Ueno, N.; Baird, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein
A; Molecule type: protein
A; Residues: 12-26 < BOBY
C; Comment: The accidic and basic fibroblast growth factors are the major endothelial-cell
ell types in vitro (although bFGF is 30-100 times more potent than aFGF in stimulating t
C; Comment: This protein binds heparin more strongly than does aFGF.
C; Superfamily: fibroblast growth factor
C; Keywords: alternative splicing; angiogenesis; blocked amino end; growth factor; hepari
F; 1-157/Product: basic fibroblast growth factor, uterine form #status predicted <MAPIl>
F; 4-157/Product: basic fibroblast growth factor, pituitary gamma form #status experiment
F; 12-157/Product: basic fibroblast growth factor, pituitary short form #status experiment
F; 23-157/Product: basic fibroblast growth factor, pituitary short form #status predicted
F; 23-157/Product: basic fibroblast growth factor, pituitary short form #status experimental < MAT6
F; 29-33,118-121/Region: heparin binding #status predicted
F; 4/Modified site: blocked amino end (Ala) (in mature form pituitary gamma) (probably ac
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A;Title: Isolation of fibroblast growth factor from bovine adrenal gland: physicochemica A;Reference number: A61094; MUID:86081530
A;Accession: A61094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Bohlen, P.; Baird, A.; Esch, F.; Ling, N.; Gospodarowicz, D. Proc. Natl. Acad. Sci. U.S.A. 81, 5364-5368, 1984
A;Title: Isolation and partial molecular characterization of pituitary A;Reference number: A22054; MUID:84298139
A;Accession: A22054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein
A; Residues: 12-157 <ESC>
A; Experimental source: pituitary gland
R; Baird, A.; Esch, F.; Boehlen, P.; Ling, N.; Gospo
R; Baird, Dept. 12, 201-213, 1985
A; Title: Isolation and partial characterization of
A; Reference number: A60316; MUID:86095426
A; Accession: A60316
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A; Residues: 12-25,27-35,'x',37-40 <GOS>
A; Residues: 12-25,27-35,'x',37-40 A; Experimental source: adrenal gland
R; Esch, F.; Baird, A.; Ling, N.; Ueno, N.; Hill, F.;
Proc. Natl. Acad. Sci. U.S.A. 82, 6507-6511, 1985
A; Title: Primary structure of bovine pituitary basic
A; Reference number: A01386; MUID: 88016731
A; Accession: A01386
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A;Title: Isolation of an amino terminal extended
A;Reference number: A24819; MUID:86295737
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                                                                                                                                                                   SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS 155
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23-35,'X',37-42
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Pred. No. 8.6e-75;
; Mismatches 0;
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A; Molecule type: mRNA
A; Residues: 1-210 < FRA>
A; Cross-references: GB:J04513; NID:9183083;
R; Shibata, F.; Baird, A.; Florkiewicz, R.Z.
Growth Factors 4, 277-287, 1991
A; Title: Functional Characterization of the
A; Reference number: A61537; MUID:92110035
A; Accession: A61537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 56-210 <KUR>
A; Cross-references: GB:M27968; NID:g182562; PIDN:AAA52448.1; PID:g182563
A; Cross-references: GB:M27968; NID:g182562; PIDN:AAA52448.1; PID:g182563
A; A; A; A; Whang, J.L.; Tumolo, A; Mergia, A; Fiddes, J.C.
Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
A; Title: Human basic fibroblast growth factor: nucleotide sequence, genon A; Reference number: A90924; MUID:87217066
A; Accession: B32878
A; Molecule type: mRNA
A; Residues: 56-210 <ABR>
A; Residues: 56-210 <ABRA
A; Residues:
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C;Date: 31-Jul-1989 #sequence_revision 31-Dec-1993 #text_change 21-Jul-2000
C;Date: 31-Jul-1989 #sequence_revision 31-Dec-1993 #text_change 21-Jul-2000
C;Accession: A32398; A61537; A26642; B32878; S00297; A54316; B54316; A33624; R;Prats, H.; Kaghad, M.; Prats, A.C.; Klagsbrun, M.; Lelias, J.M.; Liauzun, F Proc. Natl. Acad. Sci. U.S.A. 86, 1836-1840, 1999
A;Title: High molecular mass forms of basic fibroblast growth factor are init A;Reference number: A32398; MUID:89184522
A;Accession: A32398
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A;Residues: 5, ....
R;Story, M.T.; Esch, F.; Snımas...
Riochem. Biophys. Res. Commun. 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1-155 <AB2>
A;Note: the authors translated the codon GAA for residue
R;Shimoyama, Y; Gotoh, M; Ino, Y; Sakamoto, M; Kato,
Jpn. J. Cancer Res. 82, 1263-1270, 1991
A;Title: Characterization of high-molecular-mass forms of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Frie
EMBO J. 5, 2523-2528, 1986
A;Title: Human basic fibroblast growth factor: nucleotide
A;Reference number: S00297; MUID:87053817
A;Accession: S00297
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A; Residues: 'Xx', 86-88, 'X', 90-91, 'X', 93-95 <SH3>
A; Residues: 'C'Li21 hepatocellular carcinoma cell
A; Note: sequence extracted from NCBI backbone (NCBIP:71595)
A; Accession: B54316
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Kurokawa, T.; Sasada, R.; I
FEBS Lett. 213, 189-194, 1987
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A; Residues: 1-114 <SHI>
                                                                                                                                A; Molecule type: protein A; Residues: 57-210 <FEI>
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                    Shimasaki, Sommun. 142, Sequence of a
                    S.; Sasse,
702-709, 19
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                                                                                                        Lawson,
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basic

growth factor

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A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
A; Rolecule type: protein
A; Residues: 65-88,'X',90-98,'X',100 <GAU>
R; Sommer, A.; Brewer, M.T.; Thompson, R.C.; Moscatelli, D.; P.
B; Sommer, Biophys. Res. Commun. 144, 543-550, 1987
B; Mitle: A form of human basic fibroblast growth factor with
A; Mitle: A form of human basic fibroblast growth factor with
S; Mullist Grand Right Res. S42242; MUID: 87213238
                                                                                                                                                              A; Cross-references: GDB:119910; OMIM:134920
A; Cross-references: GDB:119910; OMIM:134920
A; Map position: 4q25-4q27
A; Start codon: CTG
C; Superfamily: fibroblast growth factor
C; Seywords: alternative initiators; angiogenesis; growth factor; heparin binding; F;1-210/Product: basic fibroblast growth factor, 22.5K form #status predicted <NATS
F;65-210/Product: basic fibroblast growth factor, 18K form #status predicted <NATS
F;65-210/Product: basic fibroblast growth factor, 18K form #status predicted <NATS
F;62-86/Region: heparin binding #status predicted
F;171-174/Region: heparin binding #status predicted
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Biochem. Biophys. Res. Commun. 187, 1227-1231, 1992
A;Title: Reverse transcription with nested polymerass
                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: GDB:FGF2; FGFB
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Note:
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A; Residues: 54-210 <SOM>
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FEBS Lett. 204, 203-207, 1986
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A; Residues: 65-102,'X',104-105 <GIM>
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A;Accession: A25824
A;Molecule type: protein
A;Residues: 57-77 <STO>
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Best Local
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                                                              Conservative
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98.7%;
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basic fibroblast growth factor - mous
C; Species: Mus musculus (house mouse)
C; Date: 17-Apr-1993 #sequence_revisio
C; Accession: C37360
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C37360
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A; Residues: 35-154 <CELH>
A; Cross-references: EMBL: X61697; NID: g56143;
C; Superfamily: fibroblast growth factor
C; Keywords: growth factor
F;1-9/Domain: signal sequence #status predict
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C;Species: Rattus norvegicus (Norway rat)
C;Species: Nay-1990 #sequence_revision 21-May-1990 #text_change 16-Jul-1999
C;Accession: A31674; S00876; S24309
C;Accession: A31674; S00876; S24309
R;Shimasaki, S; Emoto, N; Koba, A; Mercado, M.; Shibata, F.; Cooksey, K.
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R;El-Husseini, A.E.D.; Paterson, J.A.; Myal, Y
Biochim. Biophys. Acta 1131, 314-316, 1992
A;Title: PCR detection of the rat brain basic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:M22427; NID:g204285; R;Kurokawa, T.; Seno, M.; Igarashi, K. Nucleic Acids Res. 16, 5201, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochem. Biophys. Res. Commun. 157, 256-263, 1988 A;Title: Complementary DNA cloning and sequencing A;Reference number: A31674; MUID:89061721 A;Accession: A31674
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F;10-154/Product: basic
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A;Accession: S24309
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A; Residues: 1-154 <KUR>
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A; Residues: 1-154 <SHI>
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sic fibroblast growth factor #status
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96.8%;
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Pred. No. 1.:
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Y.; Shiu, R.P.C.
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#sequence_revision

17-Apr-1993 #text_change

16-Jul-1999

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basic fibroblast growth factor - chicke C; Species: Gallus gallus (chicken) c; pate: 01-pec-1993 #sequence_revision C; Accession: A48834; S23636 R; Borja, A.Z.; Meijers, C.; Zeller, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Species: Ovis orientalis aries, Ovis C; Date: 10-Sep-1999 #sequence_revision C; Accession: S00185
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A48834
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A; Residues: 1-146 <SIM>
C; Superfamily: fibroblast growth factor
C; Keywords: growth factor; heparin binding; mitogen
E; 18-22/Region: heparin binding #status predicted
F; 107-110/Region: heparin binding #status predicted
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A;Title: Isolation of cDNAs encoding four A;Reference number: A37360; MUID:90201563
A;Accession: C37360
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A;Residues: 1-154 <HEB>
A;Cross-references: GB:M30644;
C;Superfamily: fibroblast growt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               basic fibroblast growth factor - sheep
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                                                                                                                                                  TGQYKLGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                TGQYKLGPKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR
                                                                                                                                                                                                                              GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFFERLESNNYNTYRSRKYSSWYVALKR
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                                                                                                                                                                                                                                                                                             PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
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147; Conser
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145; Conser
                                                                                                                                                                                                                                                                                                                                          Conservative
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94.8%;
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Pred. No. 3.4e
4; Mismatches
                                                                 chicken
                                                                                                                                                                                                                                                                                                                                        Score 781; DE Pred. No. 3.6e 0; Mismatches
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10-sep-1999
                                    18-Nov-1994
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No. 3.4e-70;
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.6e-70;
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                                   #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    L.J.; Nice,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (domestic sheep)
#text_change 10-Sep-1999
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Qy
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A; Residues: 1-164 <KUS>
A; Cross-references: EMB
C; Superfamily: fibrobla
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S31622
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                        Qy
                                                       Вþ
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                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Monodelphis domestica C;Date: 20-Feb-1995 #text_change C;Accession: S31622 C;Accession: S31622 R;Kusewitt, D.F.; Sabourin, C.L.K.; Budge, C.L.; Ley, R.D.
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A; Residues: 95-128 <MIT>
A; Cross references: EMBL: X56804;
C; Superfamily: fibroblast growth
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A;Title: Expression of alternatively spliced bFGF
A;Reference number: A48834; MUID:93246053
A;Accession: A48834
A;Status: preliminary
A;Molecule type: nucleic acid
A;Residues: 1-189 <BOR>
DЪ
                                                                                                                                                                                                                                                                                                                                                     submitted to the EMBL Data Library, A; Description: Characterization of
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A;Reference number: S23636; MUID:
A;Accession: S23636
A;Status: preliminary
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                                                                                                                 SWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
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             | SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
                                                        IKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLALKYVTEECFFFERLESNNYNTYRSRK
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92.9%;
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Pred.
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Pred. No. 6e-69;
4; Mismatches
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No. 7e-68;
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164
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RESULT 9
A40117
A40117
basic fibroblast growth factor - African clawed frog
C;Species: Xenopus laevis (African clawed frog)
C;Species: Xenopus laevis (African clawed frog)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: A40117; A29618
R;Kimelman, D; Abraham, J.A.; Haaparanta, T.; Palisi, T.M.; Kirschner, M.W.
Science 242, 1053-1056, 1988
                                 Qγ
                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 95-110, 112-155 <KI2>
C; Superfamily: fibroblast growth
C; Keywords: growth factor
                                                                                                                                                                                                                                                                                                                   Cell 51, 869-877, 1987
A;Title: Synergistic induction of mesoderm A:Reference number: A29618; MUID:88052890
A;Accession: A29618
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A;Molecule type: mRNA
A;Residues: 1-137 <WIN>
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A;Title: Elevated expression of basic fibroblast growth A;Reference number: 146711; MUID:93343209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fibroblast growth factor - rabbit (fragment)
C:Species: Oryctolagus cuniculus (domestic rabbit)
C:Date: 14-Feb-1997 #sequence_revision 14-Feb-1997
C:Accession: 146711
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146711
В
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Cell 51, 869-877, 1987
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A; Residues: 1-155 < KIM>
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les 136; Conserv
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                                                                                                                                                  130;
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KLQLQAVERGVVSIKGITANRYLAMKEDGRLTSLRCITDECFFFERLEANNYNTYRSRKY
                 KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                        MAAGSITTLPTESEDGGNTPFSPGSFKDPKRLYCKNGGFFLRINSDGRVDGSRDKSDSHI
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                                                                                                                                          8,
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                                                                                                                                              Score 685; DB 1;
Pred. No. 1.3e-60;
8; Mismatches 17;
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Pred. No. 9.8e-66;
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                                                                                                                                                                                 Length 155;
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A;Molecule type: DNA
A;Residues: 1-155 <HAL>
C;Superfamily: fibroblast growth factor
C;Keywords: growth factor; heparin bind
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                                                                         Вþ
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A;Residues: 1-125 <SOM>
C;Superfamily: fibroblast growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R:Sommer, A.; Moscatelli, D.; Rifkin, D.B.
Biochem. Biophys. Res. Commun. 160, 1267-1274, 1989
A;Title: An amino-terminally extended and post-trans
A;Reference number: A32484; MUID:89273588
A;Accession: A32484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     basic fibroblast growth factor precursor, 25K-
C;Species: Cavia porcellus (guinea pig)
C;Date: 20-Oct-1989 #sequence_revision 20-Oct-19
C;Accession: A32484
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Best Local S
Matches 98
                                                                                                                                                                                                                                Matches
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Best Local S
118
                                     121
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                                                                                               KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
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AEKNWFVGLKKNGSCKRGPRTHYGQKAILFLPLPVSS
                                                                         QLQLSAESAGEVYIKGTETGQYLAMDTDGLLYGSQTPNEECLFLEELHYNTYTSKKH 117
                                                                                                                                                  MAEGEITTFSALTEREN----LPPGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHI 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
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                                   S--SWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS 155
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87; Conser
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                                                                                                                                                                                                                                             51.6%; Score 427.5; DB 1; 55.4%; Pred. No. 4.4e-35;
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Pred. No. 4.7e-39;
""" wismatches 5;
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154
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acidic fibroblast growth factor 1 precursor [validated] - human N;Alternate names: beta-ECGF; endothelial cell growth factor beta; heparin-binding growt C;Species: Homo saptens (man) C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 08-Dec-2000 C;Accession: A33665; A32316; S18217; A43804; A24662; JH0707; S35535; S35536; I39413; A23 C;Accession: A37665; A32316; S18217; A43804; A24662; JH0707; S35535; S35536; I39413; A23 C;Accession: A37665; A32316; S18217; A43804; A24662; JH0707; S35535; S35536; I39413; A23 C;Accession: A33665; A32316; S18217; A43804; A24662; JH0707; S35535; S35536; I39413; A23 C;Accession: A33665; A32316; A121-1129, 1989 A;Title: Structural analysis of the gene for human acidic fibroblast growth factor. A;Reference number: A33665; MUID:90073637
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BMBO J. 7, 959-962, 1988

A;Title: Endothelial cell growth factors i

A;Reference number: S02639; MUID:88296438

A;Accession: S02639
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C:Date: 03-Mar-1993 #sequence_revision 03-Mar-1993
C:Accession: A60130; 802639
R:Schnuerch, H:: Risau, W.
                             A;Cross-references: GB:M23087; NID:g183875; PIDN:AAA52638.1; PID:g386768 R;Wang, W.P.; Quick, D.; Balcerzak, S.P.; Needleman, S.W.; Chiu, I.M. Oncogene 6, 1521-1529, 1991 A;Title: Cloning and sequence analysis of the human acidic fibroblast groups of the human
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A; Residues: 22-30, 'X', 32-44, 'X', 46-48 <RIS>
C: Superfamily: fibroblast growth factor
C; Keywords: growth factor
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A; Residues: 1-155 <SCH>
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R;Wang, W.P.; Lehtoma, K.; Varban, M.L.; Krish, Mol. Cell. Biol. 9, 2387-2395, 1989
A;Title: Cloning of the gene coding for human a;Reference number: A32316; MUID:89343957
A;Accession: A32316
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A; Molecule type: DNA
A; Residues: 1-155 <MER>
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A; Residues: 1-155 <WAN>
A; Reference
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; Pred. No. 2.7e-34;
21; Mismatches 42;
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                                         gene
    A; Molecule type: protein
A; Residues: 16.47 <GI2>
A; Experimental source: brain
R; Gautschi, P.; Frater-Schroder,
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A; Residues: 1140 <RESS
A; Residues: 1140 <RESS
A; Residues: 1140 <RESS
A; Cross references: GB:M60515; NID:g178226; PIDN:A
R; Harper, J.W.; Strydom, D.J.; Lobb, R.R.
Biochemistry 25, 4097-4103, 1986
A; Reference number: A23553; MUID:86296647
A; Accession: A23553
A; Molecule type: protein
A; Residues: 16-155 <HAR>
R; Gimenez-Gallego, G.; Conn, G.; Hatcher, V.B.; Th
R; Gimenez-Gallego, G.; Commun. 138, 611-617, 1986
A; Title: The complete amino acid sequence of human
A; Reference number: A24820; MUID:86295741
A;Reference number: A24820; MUID:86295741
A;Accession: A24820
A;Molecule type: protein
A;Residues: 16-155 <GIN>
R;Gimenez-Gallego, G.; Conn., G.; Hatcher, V.B.; Thomas, K.A.
Blochem. Blophys. Res. Commun. 135, 541-548, 1986
A;Title: Human brain-derived actidic and basic fibroblast growth
A;Reference number: A90122; MUID:86186784
A;Accession: A24243
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A; Title: Alternative splicing generates two
A; Reference number: A43804; MUID:90265618
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A; Cross-references: EMBL:M23086
R; Chiu, I.M.; Wang, W.P.; Lehto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Crumley, G.; Dionne, C.A.; Jaye, M.
Biochem. Biophys. Res. Commun. 171, 7-13, 1990
A;Title: The gene for human acidic fibroblast
A;Reference number: 139412; MUID:90365758
A;Accession: 139413
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Nucleic Acids Res. 21, 489-495, 1993
A;Title: Cloning of two novel forms of hur
A;Reference number: S35535; MUID:93181239
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A;Accession: A24662
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A; Residues:
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A; Residues: 1-58 <PA2>
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A; Residues: 1-58 < PAY>
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A;Cross-references: GDB:119909; OMIM:131220
A;Map position: 5q31.3-5q33.2
A;Introns: 57/1; 91/3
C;Superfamily: fibroblast growth factor
C;Keywords: alternative splicing; growth factor
F;16-155/product: fibroblast growth factor
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R;Chavan, A.J.; Haley, B.E.; Volkin, D.B.; Marfia, K.E.; Verticelli, A.M.; Bruner,
Biochemistry 33, 7193-7202, 1994
A;Title: Interaction of nucleotides with acidic fibroblast growth factor (FGF-1).
A;Reference number: A53639; MUID:94271773
A;Accession: A53639; MUID:94271773
                                                                                                                                                                                                                                                                                                                                                                                                                     acidic fibroblast growth factor 1 - rat
N;Alternate names: heparin-binding growth factor 1
C;Species: Rattus norvegicus (Norway rat)
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 16-Jul-1999
C;Accession: S04147
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A;Residues: 16-30, 'x',32-49 <GAU>
R;Gautschi-Sova, P.; Muller, T.; Bohlen, P.
Biochem. Biophys. Res. Commun. 140, 874-880, 1986
A;Title: Amino acid sequence of human acidic fibroblast growth factor.
A;Reference number: A26386; MUID:87048871
A;Accession: A26386
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A; Residues: 1-155 <GGOO>
A; Cross-references: EMBL:X14232; NID:g56351;
C; Superfamily: fibroblast growth factor
C; Keywords: growth factor; heparin binding
                                                                                                                                                                                                                                                                                             A;Title: The nucleotide sequence of rat heparin binding growth A;Reference number: S04147; MUID:89240051 A;Accession: S04147
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Nucleic Acids Res. 17, 2867, 1989
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: protein
A;Residues: 16-30,'X',32-38;73-75,'X',77-97,'X',99-101;128-131,'X',133-140,'X',142-152
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Gene: GDB: FGF1; FGFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: protein A; Residues: 16-155 <GA2>
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A;Title: Partial molecular characterization of endothelial cell mitogens from human bra.
A;Reference number: A91364; MUID:86275260
A;Accession: A24301
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Matches 86; Conserv
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MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
                                                   l Similarity
85; Conser
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Pred. No. 3.4e-34;
7; Mismatches 49;
                                              Score 413.5; DB 2
Pred. No. 1.1e-33;
B; Mismatches 49
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R; Madiai, F.; Hackshaw,
Gene 179, 231-236, 1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; Hebert, J.M.; Basilico, C.; Goldfarb, M.; Haub, O.; Martin, Dev. Biol. 138, 454-463, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N;Alternate names: aFGF; FGF-1
C;Species: Mus musculus (house mouse)
C;Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
C;Accession: D37360; JC5231
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A; Introns: 57/1;
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A; Residues: 1-155 <MAD>
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                                                                                                                                                                                                                                                                                                                                                                                       C; Genetics:
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C;Comment: This protein is an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:M30641; NID:g193284; R;Madiai, F.; Hackshaw, K.V.; Chiu, I.M.
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54.18;
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Pred. No. 1.1e-33;
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1 MAAGSITTLPALPE
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   DВ
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                                                                                                                                                                                                                                                                                                                                                                                                         P03969 bos taurus
P20003 ovis aries
P09038 homo sapien
P13109 rattus norv
P15655 mus musculu
P48800 gallus gall
P48798 monodelphis
P48799 oryctolagus
P12226 xenopus lae
P34004 mesocricetu
P1996
P10935
P10935
P209082
P239688
P488804
P488806
P488807
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bos taurus
             mus musculu

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xenopus lae

mus musculu

homo sapien

xenopus lae

homo sapien
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b homo sapien
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rattus norv
gallus gall
bos taurus
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homo sapien
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Result

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Database

Searched:

45	44	43	42	41	40	39	38	37	36	35	34
200	202.5	202.5	203	203	204.5	205.5	205.5	206.5	209	212	216
24.2	24.5	24.5	24.5	24.5	24.7	24.8	24.8	24.9	25.2	25.6	26.1
209	194	194	215	208	194	207	194	207	211	209	208
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FGFA_MOUSE	FGF7_SHEEP	FGF7_HUMAN	FGFA_RAT	FGFA_HUMAN	FGF7_MOUSE	FGFG_HUMAN	FGF7_CANFA	FGFG_RAT	FGFK_HUMAN	FGF9_XENLA	FGF9_RAT
035565 mus musculu	P48808 ovis aries	P21781 homo sapien	P70492 rattus norv	015520 homo sapien	P36363 mus musculu	043320 homo sapien	P79150 canis famil	054769 rattus norv	Q9np95 homo sapien	Q91875 xenopus lae	P36364 rattus norv

ALIGNMENTS

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SEQUENCE OF 25-41. SEQUENCE OF 25-41. TISSUE-Kidney; MEDLINE-8609546; PubMed=4081126; Baird A., Esch F., Boehlen P., Ling N., Gospodarowicz D.; "Isolation and partial characterization of an endothelial cell growth factor from the bovine kidney: homology with basic fibroblast growth factor."; Regul. Pept. 12:201-213(1985).	SEQUENCE OF 1-9. MEDLINE=86395737; PubMed=3741423; Weno N., Baird A., Esch F., Ling N., Guillemin R.; "Isolation of an amino terminal extended form of basic fibroblast growth factor."; Biochem. Biophys. Res. Commun. 138:580-588(1986).	SEQUENCE OF 10-155. MEDLINE-86016731; PubMed=3863109; MEDLINE-86016731; PubMed=3863109; BESCH F., Baird A., Ling N., Ueno N., Hill F., Denoroy L., Klepper R., Gospodarowicz D., Boehlen P., Guillemin R.; "Primary structure of bovine pituitary basic fibroblast growth factor (FGF) and comparison with the amino-terminal sequence of bovine brain acidic FGF."; Proc. Natl. Acad. Sci. U.S.A. 82:6507-6511(1985).	SEQUENCE FROM N.A. MEDLINE-87217066; FubMed=3472745; Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.; Abraham J.A., Whang J.L., Tumolo R., Mergia A., Fiddes J.C.; "Human basic fibroblast growth factor: nucleotide sequence, genomic organization, and expression in mammalian cells."; Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).	SEQUENCE FROM N.A. SEQUENCE FROM N.A. MEDLINE=86261806; PubMed=2425435; Abraham J.A., Mergia A., Whang J.L., Tumolo A., Friedman J., Hjerrild K.A., Gospodarowicz D., Fiddes J.C.; "Nucleotide sequence of a bovine clone encoding the anglogenic protein, basic fibroblast growth factor."; Science 233:545-548(1986).	FGF2 OR FGF-2. BOS taurus (Bovine). Bos taurus (Bovine). Bos taurus (Bovine). Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Bovidae; Bovinae; Bos. MCBI_TaxID=9913;	POSTOS; 23-OCT-1986 (Rel. 02, Created) 23-OCT-1986 (Rel. 02, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update) Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin) [Contains: Kidney-derived growth factor].	RESULT 1 FGF2_BOVIN STANDARD; PRT; 155 AA. AC D03060.

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PTODOM; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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Science 251:90-93(1991).
-!- FUNCTION: THE HEPARI
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MISCELLANEOUS: THIS PROTEIN BINDS HERRALDS
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01-FEB-1991 (Rel. 17, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HB
growth factor) (BFGF) (Prostatropin)
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MEDDING R.J., Moritz R.L., Lloyd C.J.,
Rubira M.R., Burgess A.W.;
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Sutton R., Ward W.G.,
Submitted (SEP-1994)
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Bovidae; Caprinae; Ovis.
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Heparin-binding growth factor 2 precursor (HE
growth factor) (BFGF) (Prostatropin).
                          Sommer A., Brewei
Rifkin D.B.;
"A form of human
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MEDLINE=92121151; PubMed=1769963;
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"Crvstal structure of basic fibroblast growth factor at
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                                                                                                                                                        "Three-dimensional structure of human a structural homolog of interleukin 1 Proc. Natl. Acad. Sci. U.S.A. 88:3446-
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MEDLINE=91095983; PubMed=1702556;
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Liauzun P., Chalon P.,
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Three-dimensional structures
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M., Prats A.C., Kl
n P., Tauber J.P.,
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                       Chirino A.,
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                       Faham S.,
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.P., Amalric
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EMBL; M17599; AAA52534.1; ALT_INIT.
EMBL; X04431; CAA28027.1; -.
EMBL; X04432; CAA28029.1; -.
EMBL; X04433; CAA28029.1; -.
EMBL; X04433; CAA28029.1; -.
EMBL; X04433; CAA28029.1; -.
EMBL; X04513; AAA52448.1; -.
EMBL; J04513; AAA52448.1; -.
EMBL; J04513; AAA52448.1;
PIR; A25824; A25824.
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PIR; B24278; B32878.
PIR; B24278; B32878.
PIR; B32878; B32878.
PIR; S00297.
PDB; 1FGA; 15-JUL-93.
PDB; 1FGA; 15-JUL-93.
PDB; 1FGA; 15-JUL-93.
PDB; 1FGA; 15-JUN-97.
PDB; 1BFG; 03-APR-96.
PDB; 1BFG; 03-APR-96.
PDB; 1BFG; 03-APR-94.
PDB; 1BLD; 08-NOV-96.
PDB; 1BLD; 08-NOV-96.
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BIOCHEMISTRY 35:13552-13561(1996).

IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.

-!- SUBUNIT: MONOMER.

-!- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN
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                                                                                                                    SITE
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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PD000831; HBGF_FC
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Cooksey K., Baird A., Ling N.;
"Complementary DNA cloning and sequencing of rat ovarian basic fibroblast growth factor and tissue distribution study of its not the second street of the second street of the second secon
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01-JAN-1990 (Rel. 13, Created)
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01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin).
EGF2 OR FGF-2:
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STRAIN-SPRAGUE-DAWLEY; TISSUE-Testis;
MEDLIXE-97200905; PubMed-9048734;
Pasumarthi K.B.S., Jin Y., Cattini P.A.;
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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Kurokawa T., Seno M., Igarashi K.;
"Nucleotide sequence of rat basic fibr
Nucleic Acids Res. 16:5201-5201(1988).
                                                                                                                                                                                    SEQUENCE FROM
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NCBI_TaxID=10116;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
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98.7%;
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1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE6CE13373007129
                                                                                                              fibroblast
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1.4e-78;
nes 1;
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                                                                                                              factor cDNA.";
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RESULT 5
FGF2_MOUSE
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Best Local S
Matches 150
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EMBL; W7285; CAA30265.1; -
EMBL; W78079; AAC53225.1; -
EMBL; X61697; CAA43863.1; -
PIR; S00876; S00876.
PIR; S00876; S10876.
PIR; A31674; A31674.
HSSP; P09038; IBFF.
InterPro; IPR002209; HBGF_F
InterPro; IPR002209; HBGF_F
InterPro; IPR002348; IL1_HB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
FGF2_MOUSE STANDARD;
P15655;
01-APR-1990 (Rel. 14, Created)
                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-92329546; PubMed=1378302; El-Husseini A.E.D., Paterson J.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-SPRAGUE-DAWLEY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBUNIT: MONOMER.
TISSUE SPECIFICITY:
                                                                                                                                  SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                            MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
                                                                                                                SSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 154
                                                                                                                                                                                                                                           MAAGSITSLPALPEDGG-GAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHV
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PD000831; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                          Similarity
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154 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the rat fibroblast growth factor-2 promoter e to mitogenic stimuli in glioma C6 cells."; m. 68:898-908(1997).
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                                                                                                                                                                                                                                                                                                             Conservative
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30 H
118 H
: 17139 MW;
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96.8%;
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                                                                                                                                                                                                                                                                                                        Score 796.5; DB 1
Pred. No. 1.1e-75;
3; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                      HEPARIN-BINDING GROWTH FA
HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
; 1A0:714FF423D8403 CRC64;
                                 PRT;
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Best Local
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BINDING
SEQUENCE
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EMBL; AF065904; AAC17504.1; --
EMBL; AF065905; AAC17505.1; --
PIR; C37360, C37360.
HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
-!- EUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-APR-1990 (Rel. 14, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dev.
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R. "Isolation of cDNAs encoding four mouse FGF family members characterization of their expression patterns during embrycpey. Biol. 138:454-463(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      growth factor) (BFGF) (Prostatropin).
FGF2 OR FGF-2.
                                                                                                                                                                                                                                                                    SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                 PRINTS; PR00262; IL1HBGF
ProDom; PD000831; HBGF_FC
                                                                                                                                                                                                                                                                                                                         MGD; MGI:95516; Fgf2.
InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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STRAIN=C57BL/6J, A/J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
MEDLINE=90201563; PubMed=2318343;
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                PROPEP
                                                                                                                                                                                                                                                           Growth factor; Mitogen; Angiogenesis; Heparin-binding
 121
                          60
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                                                                                                      Н
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY: BELONGS TO THE HEPARIN-BINDING
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                                                                         SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS 155
                                         KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                          KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTEECFFFERLESNNYNTYRSRKY 119
                                                                                                                                                                                                                                                                                                                                                                                                                                              M30644; AAA37621.1;
                                                                                                                                          Similarity
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26
115
154 /
                                                                                                                               Conservative
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118
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Rodentia;
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                                                                                                                                          94.48;
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                                                                                                                                                                                              M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      expression patterns during embryogenesis.";
                                                                                                                             Score 781.5;
Pred. No. 4e-7
4; Mismatches
                                                                                                                                                                                             HEPARIN (POTENTIAL)
689F677416274388
                                                                                                                                                                                                                     HEPARIN (POTENT)
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                                                                                                                                                                                                                       (POTENTIAL).
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                                                                                                                                                                                              CRC64;
                                                                                                                                                      Length
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                                                                                                                                                                                                                                   FACTOR
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Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     restrictions
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fibroblast

Euteleostomi; Monodelphis.

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                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 93.5
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P48800;
01-FEB-1996
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SEQUENCE
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01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation updat
Heparin-binding growth factor 2 precursor (
growth factor) (BFGF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Borja A.Z., Zeller R., Meijers C.;

"Expression of alternatively spliced begf first coding exons and antisense mrNas during chicken embryogenesis.";

Dev. Biol. 157:110-118(1993)

-1- FUNCTION: THE HEBRRIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.

-1- SUBGUIT: MONOMER.

-1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gallus gallus (Chicken).

Gallus gallus (Chicken).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Eukaryota; Metazoa; Chordata; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGF2 OR FGF-2.
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Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; M95707; AAA48617.1; HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AFGF.
-!- SIMILARITY: BELONGS TO THE HEPARIN-BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE-93246053; PubMed-7683281;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9031;
        122
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                                                            65
                                                                                                             62
                                                                                                                                                              LQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYS 121
        SWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
                                                         LQLQAEERGVVSIKGVSANRFLAMKEDGRLLALKCATEECFFFERLESNNYNTYRSRKYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 factor; Mitogen; Angiogenesis; Heparin-binding.

1 12 BY SIMILARITY.

13 158 HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                  30
119
158
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                                                                                                                                                                                                                                                                                                                                                                                                       34 H
122 H
17374 MW;
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                                                                                                                                                                                                                                                                                                  93.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HBGF_FGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IL1_HBGF.
                                                                                                                                                                                                                                                                    Score 770; DE Pred. No. 6.5e 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                    HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
; 7B69B684C17F1816 CRC64;
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                                                                                                                                                                                                                                                                                                  DB 1;
.5e-73;
                                                                                                                                                                                                                                                                         6;
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                                                                                                                                                                                                                                                                                                                        Length
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FGF2_MONDO STANDARD; PRT; 156 AA.
ID FGF2_MONDO STANDARD; PRT; 156 AA.
AC P48798;
DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Heparin binding growth factor 2 precursor (HBGF-2)
E Heparin Standard Growth Factor 2 precursor (HBGF-2)
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the Euro
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PROPER
PRO
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PROSITE; PS00247; HB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002209;
InterPro; IPR002348;
Pfam; PF00167; FGF; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; 215154; CAA78854.1; HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.isb-sib-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=13616;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota;
Mammalia; |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                growth factor) (BFGF) (Prostatropin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Monodelphis
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                                                            61
                                                                                                             60
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YSSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                                             MAAGSITTLPALPED-GGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPH
                                                                                                                                                                    MAAGSITTLPALSGDGGGGGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGIREKSDPN
                                                                                       IKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRK 119
                                                            IKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLALKYVTEECFFFERLESNNYNTYRSRK
                                                                                                                                                                                                                                                                      al Similarity 92.9
145; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Metatheria;
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10
28
117
156
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domestica (Short-tailed grey opossum).
Metazoa; Chordata; Craniata; Vertebrata;
etatheria; Didelphimorphia; Didelphidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HBGF_FGF.
                                                                                                                                                                                                                                                                                                  91.6%;
92.9%;
                                                                                                                                                                                                                                                                      Score 758.5; DB
Pred. No. le-71;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             158
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Length Indels

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RESULT 8
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Best Local S
Matches 136
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Am. J. Pathol. 143:518-527(1993).
-i- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGEI-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FGF2_RABIT STANDARD; PRT; 137 AA. P48799; P48799; Ol-FEB-1996 (Rel. 33, Created) Ol-FEB-1996 (Rel. 33, Last sequence update) Ol-MAR-2002 (Rel. 41, Last annotation update) Heparin-binding growth factor 2 (H3GF-2) (Basic fibroblast factor) (BFGF) (Prostatropin) (Frayment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its European Bioinformatics Institute. There are no restrictions on its content is in no way made the content is in no way made that the content is in no way made that the content is a long as its content is in no way made that the content is a long as its content is in no way made that the content is a long as its content is a long as long as its content is a long as long as its content is a long as its 
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STRAIN-NEW ZEALAND WHITE; TISSUE-Smooth muscle;
MEDLINE-93343209; PubMed-8342599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS002
Growth factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR002209; HBGF_FGF. Pfam; PF00167; FGF; 1. ProDom; PD000831; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; L12034; AAA31248.1; -. HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Cranıata; vel
Mammalia; Eutheria; Lagomorpha; Leporidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BINDING
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121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
                                            TGQYKLGPKTGPGQKAI 146
                                                                                                 GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR
                                                                                                                         GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR 129
                                                                                                                                                                                             PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
TGQYKLGSKTGPGQKAI 137
                                                                                                                                                                                                                                                                                                       136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SM00442; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PS00247; HBGF_FGF; 1.
actor; Mitogen; Angiogenesis; Heparin-binding.
18 22 HEPARIN (POTENTIAL).
107 110 HEPARIN (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                           18
107
137
137 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cuniculus (Rabbit).
Chordata; Craniata;
                                                                                                                                                                                                                                                                                                    Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                              15418
                                                                                                                                                                                                                                                                                                                       88.9%;
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                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                               Score 736; DB 1;
Pred. No. 1.9e-69;
0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vertebrata; Euteleostomi; ae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Usage
                                                                                                                                                                                                                                                                                                                                              Length 137
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RESULT 9
FGF2_XENLA
ID FGF2_X
AC P12226
DT 01-VAN
DC EURATY
OC Amphil
OC Xenope
OX NCBL_T
RN Kimeln
RT SEQUEN
RX MEDLIN
RA Kimeln
RT SEQUEN
RY SEQUEN
RY SEQUEN
RY Cell'
CC -1-S
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RY CENT
DR PIR;

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Matches 130
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BINDING
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                  Growth
PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FGF2 OR FGF-2.
Xenopus laevis (African clawed frog).
Xenopus laevis (African clawed frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Anura: Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M18067; AAA49726.1; -. 
PIR; A29618; A29618. 
PIR; A40117; A40117. 
HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The presence of fibroblast growth as a natural mesoderm inducer."; Science 242:1053-1056(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JAN-1990 (Rel. 13, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P12226;
01-OCT-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         embryo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kimelman D., Kirschner M.;
"Synergistic induction of mesoderm by FGF and
identification of an mRNA coding for FGF in th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kimelman D., Abraham J., Haaparanta T., Palisi T., Kirschner M.;
"The presence of fibroblast growth factor in the frog egg: its r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FGF2_XENLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProDom; PD000831; HBGF_FGF; SMART; SM00442; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00262; IL1HBGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 95-155 FROM N.A. WEDLINE=88052890; PubMed=3479265;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=8355;
61
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                                                                                                                                          \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
                                                                                          KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51:869-877(1987).
KLQLQAVERGVVSIKGITANRYLAMKEDGRLTSLRCITDECFFFERLEANNYNTYRSRKY
                                                                                                                                                                                       130; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                               3; PSUvz=,, factor; Mitogen;
                                                                                                                                                                                                                                                                                                                155
                                                                                                                                                                                                                                                                                                                                       10
27
116
111
                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Rel. 12, Created)
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                                                                                                                                                                                                                                                                                                                AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                           155 H
31 H
119 H
111 M
; 17241 MW;
                                                                                                                                                                                                                 82.7%;
83.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Angiogenesis; Heparin-binding.
                                                                                                                                                                                          8;
                                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                              HEPARIN (POTENTIAL).
MISSING (IN REF. 2).
; 036735C8063142FD C
                                                                                                                                                                                                                                                                                                                                                                                     HEPARIN-BINDING GROWTH FACTOR HEPARIN (POTENTIAL).
                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                              685;
No. 4.
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                                                                                                                                                                                                              DB 1;
.2e-64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGF-beta
                                                                                                                                                                                                                                                                                                                CRC64;
                                                                                                                                                                                                                                     Length 155;
                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          egg: its role
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Qy

121

155

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RESULT 10

PREFL_MESAU

ID FLEET

P34004

AC P34004

AC P34004

DT 01-FEB

DT 01-FEB

DT 01-FEB

DT 01-FEB

DT 01-FEB

CO Eukary

OC Eukary

OC Mesocr

OX NCBL-1

RN SEQUEN

RA Hall J

RT TChara

RT and 1t

RL J. Cel

CC -i-FE

CC -i-FI

CC -i-FI

CC -i-FI

CC -i-MI

CC C-i-MI

CC C
RESULT 11
FGF1_CHICK
ID FGF1_C
AC P19596
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                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BINDING
BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P34004;
D1-FEB-1994 (Rel. 28, Created)
D1-FEB-1994 (Rel. 28, Last sequence update)
O1-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HB growth factor) (AFGF).
  FGF1_CHICK P19596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002348;
Pfam; PF00167; FGF; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR; A60721; A60721.
HSSP; P05230; 1RML.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. MEDLINE-90270291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Growth factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR00262; IL1HBGF
ProDom; PD000831; HBGF_F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hall J.A., Harris M.A., Malark M., Mansson P.E., Zhou H., Harris "Characterization of the hamster DDT-1 cell aFGF/HGBF-I gene and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; P05230; 1RML.
InterPro; IPR002209; HBGF_FGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            - I - SIMILARITY: BELONGS TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10036;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mesocricetus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mesocricetus auratus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FGF1_MESAU
                                                                                                                                              118
                                                                                                                                                                                         121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                       58
                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                  Ц
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                lits modulation by steroids.";

Cell. Biochem. 43:17-26(1990).

FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBUNIT: MONOMER. MISCELLANEOUS: THE THAN DOES BEGF.
                                                                                                                                                                                                                                                               KLQLQABERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY
                                                                                                                                                                                                                                                                                                                                                           MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
                                                                                                                                              AEKNWFVGLKKNGSCKRGPRTHYGQKAILFLPLPVSS 154
                                                                                                                                                                                       S--SWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                    QLQLSAESAGEVYIKGTETGQYLAMDTDGLLYGSQTPNEECLFLERLEENHYNTYTSKKH
                                                                                                                                                                                                                                                                                                                                MAEGEITTFSALTERFN----LPPGNYKKPKLLYCSNGGHFLRILPDGTVDGTRDRSDQHI
                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
87; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SM00442; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24
113
155
                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mitogen; Angiogenesis; Heparin-binding.

1 15 BY SIMILARITY.
6 155 HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HBGF_FGF; 1.
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116
17403
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 51.6%;
55.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IL1_HBGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW;
                                                                                                                                                                                                                                                                                                                                                                                                                         17;
                                                                                                                                                                                                                                                                                                                                                                                                                       Score 427.5;
Pred. No. 2.2e
L7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
; 41E5EC760E412CC5 CI
                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HEPARIN-BINDING GROWTH FACTORS FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        precursor (HBGF-1) (Acidic fibroblast
                        155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155
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                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2e-37;
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                                                                                                                                                                                                                                                                                                                                                                                                                            48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
; Cricetinae;
                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGENTS
IN
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1 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHÞDGRVDGVREKSDPHI 60

21;

Indels

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Gaps

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Query Match
Best Local S
Matches 85
                                                                             SMART; SM00442; FGF; 1
PROSITE; PS00247; HBGF_FGF; 1
Growth factor; Mitogen; Angio
PROPEP 1 15
CHAIN 16 155
CHAIN 2 15
BINDING 24 28
BINDING 113 116
SEQUENCE 155 AA; 17322 MW;
                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Risau W., Gautschi-Sova P., Boehlen P.;
"Endothelial cell growth factors in embryonic and adult chic
are related to human acidic fibroblast growth factor.";
EMBO J. 7:959-962(1988).
-!- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGE
-!- FUNCTION THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION
VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION
CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-FEB-1991 (Rel. 17, Created)
01-FEB-1996 (Rel. 3, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Alpha-endothelial cell growth factor).
                                                                                                                                                                                                                                                                                                                                       EMBL; S63263; AAB19629.1; -. EMBL; U31863; AAA80310.1; -. EMBL; S63261; AAD13942.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Differentiating and mature neur growth factor gene during chick Development 111:1143-1154(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FGF1 OR FGF-1.
Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                          PRINTS; PR00262; IL1HBGF
ProDom; PD000831; HBGF_F
                                                                                                                                                                                                                                                         HSSP: P05230; 2AXM.
InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                        PIR; S02639; S02639.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=88296438; PubMed=3402441;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 22-48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. Wartin G.R., Han J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Schnurch H., Risau
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE=91347925; PubMed=1715259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBUNIT: MONOMER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THAN DOES BEGF
 85; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (JUL-1995) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.K.;
                                                                                                                                                                                                                          HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Chordata; Craniata; Vertebrata; Neognathae; Galliformes; Phasiani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mature neurons express the acidic fibroblast
uring chick neural development.";
                   55
50
                  . 68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the EMBL/GenBank/DDBJ
                                                                                                                                                                             Angiogenesis; Heparin-binding.
                                                                                 MW:
Score 419.5;
Pred. No. 1.5e
?1; Mismatches
                                                                            HEPARIN-BINDING GROWTH FACTOR ENDOTHELIAL CELL GROWTH FACTOR HEPARIN (POTENTIAL).

HEPARIN (POTENTIAL).

BEDB70545E2B4365 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   There are no restrictions ong as its content is in
                  .5e-36;
                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Phasianidae; Phasianinae;
   42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E ANGIOGENIC F CELL TYPES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                 FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chick brain
                                  155;
                                                                                                                                 ALPHA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRONGLY
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RESULT

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FGF1_HU

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P05230; P07502;
13-AUG-1987 (Rel. 05, C
13-AUG-1987 (Rel. 05, I
01-MAR-2002 (Rel. 41, I
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_HUMAN
                                                                                                                                          MEDLINE=92019819; PubMed=1717925; Wang W.P., Quick D., Balcerzak S.P., "Cloning and sequence analysis of the factor gene and its preservation in Joncogene 6:1521-1529(1991).
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
             splicing act
J. Exp. Med.
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MEDLINE=89343957; F
Wang W.P., Lehtoma
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ck E.J.;
acidic fibroblast growth factor icing acts like an antagonist.";
Exp. Med. 175:1073-1080(1992).
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-2002 (Rel. 41, Last annotation update)
n-binding growth factor I precursor (HBGF-1) (Acidic fibrobl.
factor) (AFGF) (Beta-endothelial cell growth factor) (ECGF-
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hi W.S., M
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., Maciag T., Drohan W.N.;
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"X-ray crystal structure of human
"Liochemistry 35:2086-2094(1996).
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                                          "Three-dimensional structure of solution: effects of binding to J. Mol. Biol. 264:162-178(1996)
                                                                                          Pineda-Lucena
Rico M., Gimer
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Gimenez-Gallego G.;
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Gautschi P., Frater-Schroeder
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MEDLINE=86296647; PubMed=2427112;

Harper J.W., Strydom D.J., Lobb R.R.;

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to bovine acidic brain fibroblast grow

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MEDLLIME=94069734; PubMed-7504343;
Zhao X.M., Yeoh T.K., Hiebert M.,
"The expression of acidic fibrobl
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Jimenez M.A., N
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J. Mol. Biol. 281.800-015/1000
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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-!- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN,
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"Solution structure of acidic
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PROSITE; PS00247; HBGF_FGF; 1.
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FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIGGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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A24662;
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 KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY
                     MAEGEITTFTALTEKFN---LPPGNYKKPKLLYCSNGGHFLRTLPDGTVDGTRDRSDQHI
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17; Mismatches
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                                                                                                          HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
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01-MAR-2002 (Rel. 41, Last annotation
Heparin-binding growth factor 1 precur
growth factor) (APOTE)
                                                                                                                                                                         "Characterization of the 1B promoter of fibroblast growth factor and its expression in the adult and developing mouse brain.";
J. Biol. Chem. 271:30263-30271(1996).
-I- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC A IN VIVO AND ARE POPENT MITOGENS FOR A VARIETY OF CELL TYPES I VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
EMBL;
EMBL;
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MEDLINE=97128312;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.; "Isolation of cDNAs encoding four mouse FGF family members a characterization of their expression patterns during embryog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic Acids [2]
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FGF1 OR FGF-1 OR FGFA.
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"The nucleotide sequent
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                                                                          modified
                                                                                                  the European Bioinformatics Institute.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HBGF-1).";
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SIMILARITY: BELONGS TO
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M30641;
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requires a license agreement (See
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CAA32448.1;
AAA37618.1;
AAC52969.1;
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J5195515;

LPTO; IPR0022U-,
LETPTO; IPR0022U-,
LETPTO; IPR002348; 1.
LAM; PR00157; FGF; 1.
PRINTS; PR00262; ILLHBGF.
PRODOM; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
TOWTh factor; Mitogen; Angiogenesis; Hep
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FGF1_PIG
p20002;
01-FEB-1991 (Rel. 17, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Alpha-endothelial cell growth factor)
                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=92062117; PubMed=1719973;
Schmidt M., Sharma H.S., Schott R.J., Schaper W.;
**Ramplification and sequencing of mRNA encoding acidic growth factor (aFGF) from porcine heart.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sus scrofa (Pig).
Eukaryota; Metazoa;
Mammalia; Eutheria;
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PIR; 1
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                                                                                                                                                                                                                                                                                                                                                                                    Biochem.
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MEDLINE=89231704; PubMed=2714282;
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NC; D37360; D37360.
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Matches 84
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                                                                                                                                                                                     23-OCT-1986 (Rel. 02, Created)
23-OCT-1989 (Rel. 10, Last sequence update)
01-MAR-1989 (Rel. 41, Last annotation update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Prostatropin) (Endothelial cell growth factor heta and alpha chains) (Acidic eye-derived growth factor II) (EDGF
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MEDLINE=89083506; PubMed=3205724; Halley C., Courtois Y., Laurent M
                                       SEQUENCE FROM TISSUE-Retina;
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HSSP; P05230; 2AXM.
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                                                                                                                                     Eukaryota; Metazoa;
Mammalia; Eutheria;
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FGF1 OR FGFA OR HBGF-1 OR
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Cetartiodactyla; Rur
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54.9%;
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HEPARIN (POTENTIAL).
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R -> Y (IN REF. 2).
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Alterio J. Halley C., Brou C., Soussi T.
Alterio J. Halley F. Brou C., Soussi T.
                                                                                                                                                                                                                  Sharma H.S., Schaper W.,
"Isolation of heparin-binding growth
                                                                                                                                                                                                                                                                                              MEDILINE-86261806; PubMed=2425435;
Abraham J.A., Mergia A., Whang J.L., Tumolo A.,
Hjerrild K.A., Gospodarowicz D., Fiddes J.C.;
"Nucleotide sequence of a bovine clone encoding
protein, basic fibroblast growth factor.";
Science 233:545-548(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Proc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=87016918; PubMed=3532107; Burgess W.H., Mechaman T., Marshak D.R., Fraser B.A., Maclag T.; Structural evidence that endothelial cell growth factor beta is 1 precursor of both endothelial cell growth factor alpha and acidic fibroblast growth factor.";
                                                                                                                   X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS). MEDLINE=91095983; PubMed=1702556;
                                                                                                                                                      SEQUENCE OF 1-18 FROM N.A. Philippe J.M., Renaud F., Submitted (JUL-1992) to th
                                                                                                                                                                                                                                      Quinkler W., Maasberg
Sharma H.S., Schaper V
                                                                                                                                                                                                                                                                                                                                                                                                                 Boehlen P., Esch F., Baird A., Gospodarowicz "Acidic fibroblast growth factor (FGF) from k
                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-86055750; Pul
Boehlen P., Esch F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disalvo J., Thomas K.;
"Brain-derived acidic fibroblast growth sequence and homologies.";
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Disalvo J., Thomas K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              [5]
SEQUENCE OF 16-155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Complete primary structure of prostatropin,
cell growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=87026586; PubMed=3768327; Crabb J.W., Armes L.G., Carr S.A., Bordoli R.S., McKeehan W.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 2-155.
MEDLINE=87026586;
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Nucleic Acio
                                                                                            Zhu X., Komiya H., Chirino A.,
Hsu B.T., Rees D.C.;
                                                                                                                                                                                                               canine
                                                                                                                                                                                                                                                              MEDLINE=89231704; PubMed=2714282;
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                                                                                  "Three-dimensional structures
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POLS. 1019 ance 251:90-93(1991).

BINDING GROWTH FACTORS ARE ANGIOGENIC FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC FUNCTION AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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Mitogen; FGF; HBGF_FGF; HBGF_FGF;

Angiogenesis;

Heparin-binding;

Acetylation;

EMBO

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or send an email to license@isb-sib.ch).
                          entities requires a license agreement (See http://www.isb-sib.ch/announce/
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MISCELLANEOUS: THAN DOES BFGF.
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Pfam; PF00167; FGF; InterPro; IPR002348; IL1_HBGF LL; M13439; AAA30516
LL; X13221; CAA3110
X14032; CAA32151
L; X35608; AAA30517
LL; X97660; AAA30517
L; M97660; AAA30564
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L; A55043; GE5043; ; AAA30516.1; CAA31610.1; CAA32192.1; AAA30517.1; CAA47063.1; AAA30563.1; AAA30564

HEPARIN HEPARIN ACETYLATION ENDOTHELIAL CELL GROWTH FACTOR ALPHA HEPARIN-BINDING ENDOTHELIAL CELL (POTENTIAL) (POTENTIAL) GROWTH GROWTH FACTOR BETA. GROWTH FACTOR 1.

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Post-processing: Minimum Match 0%
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8: sp_organel:*
9: sp_phage:*
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11: sp_rodent:*
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12: sp_virus:*
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14: sp_urclass
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SUMMARIES

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SEQUENCE
                               01-NOV-1996 (TrEMBLrel. 01, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
EIBROBLAST GROWTH FACTOR 2 (FGF-2) (FIBROBLAST GROWTH FACTOR, BA.
(BFGF) (HEPARIN-BINDING GROWTH FACTOR 2) (HBGF-2) (PROSTATROPIN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Multiple novel variants of fibroblast growth factor 2 transcripts expressed in mouse embryos."; submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases. EMBL; AY027551; AAK52308 1; -
SEQUENCE 153 AA; 17024 MW; AD8163CD8FA2FAAB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
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No. 1.1e-75;
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      RA MSCGATEGLIA D. Joseph-Silverstein J., Manejias R., Rifkin D.B.;
RT "Mr 25,000 heparin-binding protein from guinea pig brain is a high
RT "Mr 25,000 heparin-binding protein from guinea pig brain is a high
RT "Mr 25,000 heparin-binding protein from guinea pig brain is a high
RT molecular weight form of basic fibroblast growth factor.";
RL Proc. Natl. Acad. Sci. U.S.A. 84:5778-5782(1987).
C. 1 FUNCTION: WIDE-SPECTRUM MITGGENIC, ANGIOGENIC, AND NEUROTROPHIC
C. 1 FUNCTION: MIDE-SPECTRUM MITGGENIC, ANGIOGENIC, AND NEUROTROPHIC
C. 1 FORCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENICAND PATHOLOGIC
C. 1 PROLIFERATION, AND TUMOR GROWTH. POTENT MITGGEN AND CHEMOATTRACTANT FOR
C. 2 PROLIFERATION, AND MAINTENANCE OF CELLS. IN THE CENTRAL HERVOUS
C. 2 PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL HERVOUS
C. 2 SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO
C. 3 SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO
C. 4 STATATAT SOURCE BY SIMILARITY).
C. 1 SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFRI AND AT LEAST
C. 1 SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFRI AND 25 KDA
C. 1 STATIATION SITES. BOTH FORMS ARE ACTIVE.
C. 1 PTM: THE N-TERMINAL OF ISOFORM 18 KDA IS BLOCKED (PROBABLE).
C. 1 PTM: THE N-TERMINAL OF ISOFORM 18 KDA IS BLOCKED (PROBABLE).
C. 1 SIMILARITY TO THE HEPARIN-BINDING GROWTH FACTORS FRMILY.
C. 1 SIMILARITY TO THE HEPARIN-BINDING GROWTH FACTORS FRMILY.
C. 1 SIMILARITY TO THE HEPARIN-BINDING GROWTH FACTORS FRMILY.
C. 2 SEMILARITY TO THE HEPARIN SEQUENCE AS WELL AS ON THE BASIS OF
DESIGNATE ANATOL ACTORS FOR SECUENCE AS WELL AS ON THE BASIS OF
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EMBL; L75974; AAA85394.1; ALT_FRAM
HSSP; P09038; 1BLA.
InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                            Growth factor; Mitogen; Alternative initiation;
                                                                                                                                                                                                                                                          PRINTS; PR00262; IL1HBGF. ProDom; PD000831; HBGF_FG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Burgess W.H., Bizik J., Mehlman T., Quarto N., RifKin D.B.; "Direct evidence for methylation of arginine residues in himolecular weight forms of basic fibroblast growth factor."; Cell Regul. 2:87-93(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PARTIAL SEQUENCE, MEDLINE-91322114;
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Ricciardelli C.;
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10141;
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AND METHYLATION PubMed=1713785;
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CELL ATTACHMENT SITE (PO
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HEPARIN (BY SIMILARITY).
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Hystricognathi; Caviidae;
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8 KDA BASIC
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FIBROBLAST
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Susaki K., Nakamura K., Chiba C., Saito
Susaki K., Nakamura K., Chiba C., Saito
Ference of FGF2 during newt retinal
regeneration.";
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8; Mismatches
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Q9BDX1;
01-JUN-2001 (TrEM
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BASIC FIBROBLAST
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Submitted
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ProDom; PD000831; HBGF_FGF; 1.

SMART; SM004442; FGF; 1.

PROSITE; PS00247; HBGF_FGF; 1.

Growth factor; Mitogen; Vascularization; Heparin-binding;
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae;
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InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ONE HEPARAN SULFATE (BY SIMILARITY)
-i- SIMILARITY: BELONGS TO THE HEPARIN-
EMBL; AF060562; AAC35912.1; -
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TISSUE=ADRENAL GLAND;
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                                                                                      Q9BDX1
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FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND DEUROTROPHIC FACTOR. IMPLICATED IN MITOGENIC, ANGIOGENIC, AND PATHOLOGIC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOATTRACTANT FOR MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION, PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFRI AND AT LEAST
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                                                                                                                                                                       ILFLPMSAKS
                                                                                                                                                                                                                                                                                                                                                                              129;
                                                                                                                                                                                                                                                                                                                                                                                          Similarity
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brGF in canine Hemangiosarcoma.";
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 (TrEMBLrel.
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)BLAST GROWTH
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                                                                                      PRELIMINARY;
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99.2%;
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 FACTOR (FRAGMENT).
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ATTACHMENT SITE (POTENTIAL).
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Best Local Sim
Matches 109;
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Q9N1S7;
01-OCT-2000 (TrEMBLrel. 1
01-OCT-2000 (TrEMBLrel. 1
01-DEC-2001 (TrEMBLrel. 1
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-20532861; PubMed-11078967; Wagener A., Blottner S., Goritz F., "Detection of growth factors in the capreolus)."; Anim. Reprod. Sci. 64:65-75/2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mammalia;
Cervidae;
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"Alterations in Collagen and Elastin Gene Expression in F
"Alterations in Collagen and Elastin Gene Expression in F
Pulmonary Vessels in Monkeys Following Prenatal Nicotine
Possible Role of alpha7 Nicotinic Acetylcholine Receptor
Pulmonary Hypertension.";
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF251270; AAK37962.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Macaca mulatta (Rhesus macaque).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
Cercopithecinae; Macaca.
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ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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                                                                            PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
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                                                                                                                                                                                                                                                                                                                  EMBL; AF152587; AAI
HSSP; P09038; 4FGF
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AF152587; AAF73226.1; -.
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; Eutheria; Ceta
; Odocoileinae;
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IPR002348; IL1_HBGF.
0167; FGF; 1.
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; Chordata; Craniata; '
; Cetartiodactyla; Rum.
inae; Capreolus.
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98.2%;
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Last annotation updat
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Pred. No. 3
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Ruminantia; Pecora; Cervoide
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.7e-55;
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Q925A1;
Q1-DEC-2001
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SEQUENCE
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
NCBI_TaxID=8330;
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01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
FIBROBLAST GROWTH FACTOR-2 (FRAGMENT).
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                   FIBROBLAST GROWTH
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PROSITE; PS00247; HBGF_FGF; 1.
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ProDom; PD000831; HBGF_FGF;
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InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
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Q1-DEC-2001 (Trembi
Q1-DEC-2001 (Trembi
FIBROBLAST GROWTH F
       Q07659
Q07659;
Q1-NOV-1996
Q1-NOV-1996
Q1-YQN-2001
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Submitted (FEB-2001) to the EMBL/GenBank/DDBJ database EMBL; AY027558; AAK52310.1; -.
SEQUENCE 109 AA; 12388 MW; 61074ADE3303C860 CRC64;
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Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                         "Multiple novel variants of fibroblast expressed in mouse embryos."; submitted (FEB-2001) to the EMBL/GenBar EMBL; AY027557; AAK52309.1; -. SEQUENCE 112 AA; 12725 MW; B00557AE
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Dirks R.P., G
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Dirks R.P., G
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Mammalia; Eutheria;
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                                                                                                                         SSWYVALKRTGQYKLGPKTGPGQKAILFLPMSAKS 155
                                                                                                     SSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
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Rodentia;
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Rodentia;
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Pred. No. 4e-4
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Sciurognathi; Muridae;
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
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P79706;
01-MAY-1997 (TYEMBLYEL 0
01-MAY-1997 (TYEMBLYEL 0
01-DEC-2001 (TYEMBLYEL 1
BASIC EGF (FRAGMENT)
                                                         Suzuki A.
Kaneda T.
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SEQUENCE FROM N.A.
MEDLINE=93246053;
       early Cynops gastrula.";
Submitted (NOV-1996) to the
EMBL; D89443; BAA13958.1; -.
HSSP; P09038; 4FGF.
                                                                               SEQUENCE FROM TISSUE=EMBRYO;
                                                                                                                      Cynops pyrrhogaster (Japanese common
Eukaryota; Metazoa; Chordata; Crania;
Amphibia; Batrachia; Caudata; Salama;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Development 109:387-393(1990).
EMBL; M95706; AAA48616.1; -.
EMBL; X56804; CAA40139.1; -.
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Borja A.Z., Zeller R., Meijers C.;
"Expression of alternatively spliced bFGF first
antisense mRNAs during chicken embryogenesis.";
Dev. Biol. 157:110-118(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Archosauria;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gallus gallus (Chicken).
                                                                                                            NCBI_TaxID=8330;
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                                               "Serial expression of the
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146 AA; 16182 M
IPR002209;
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                                                                     Tabata
                                                                                         N.A.
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factor during
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Neognathae; Galliformes; Phasianidae; Phasianinae;
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                                                                    Sakaguchi
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Last seq
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                                                                                                                       Craniata; Verte
Salamandroidea;
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oidea; Salamandridae; Cyno
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Best Local
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PRINTS; PR00262; IIIHBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
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NON_TER
SEQUENCE
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ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-FETAL PLACENTAL ARTERY;
Zheng J., Tsoi S.C., Magness R.R.;
Trowth factor expression in ovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mammalia; Eutheria; Cetartiodactyla;
Bovidae; Caprinae; Ovis.
NCBI_TaxID=9940;
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01-DEC-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (MAR-2000)
                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00247; HBGF_FGF;
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61
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SRKYS
                                            SRKYS 121
                                                                                                                                                                                th 41.3%;
L Similarity 100.0%;
65; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 57.9%;
Similarity 88.1%;
89; Conservative
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0167; FGF; 1.
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101 AA;
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Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
65
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                                                                                                                                                                                                                                                                                            76 AA;
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(TrEMBLrel. 15, Last sequence update)
(TrEMBLrel. 19, Last annotation update)
BLAST GROWTH FACTOR (FRAGMENT).
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                                                                                                                                                                                                                                                                                            8796 MW;
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Pred. No. 1.2e-44;
6; Mismatches 6.
                                                                                                                                                                                Score 342; DB 6
Pred. No. 7.6e-
); Mismatches
                                                                                                                                                                                                                                                                                               7D984E2F97453B20 CRC64;
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                                                                                                                                                                                                                             Length 76;
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RESULT

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RESULT Q16443
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000527;
01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1999 (TrEMBLrel. 09, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
BASIC FIBROBLAST GROWTH FACTOR (FRAGMENT).
FGF-2 OR FGF2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q16443 PRELIMINARY; PKT; 114 An. Q16443; O1-NOV-1996 (TrEMBLrel. 01, Created)
O1-NOV-1996 (TrEMBLrel. 01, Last sequence update)
O1-JUN-2001 (TrEMBLrel. 17, Last annotation update)
BASIC FIRBOBLAST GROWTH FACTOR (FRAGMENT).
     NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Mutations in the 5' untranslated region of the FGF-2 gene: transition G to A on position 19 and transversion G to C on position 97."; submitted (NOV-1999) to the EMBL/GenBank/DDBJ databases. EMBL; Y13468; CAA73668.1; -
                                                                                                                                                                                                 MEDLINE=92152654; PubMed=1785797; Florkiewicz R.Z., Shibata F., Barankiewicz T., Bai Gonzalez A.M., Florkiewicz E., Shah N.; "Basic fibroblast growth factor gene expression."; Ann. N. Y. Acad. Sci. 638:109-126(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Handschug K., Glaeser C.;

"Polymorphism in the 5' untranslated region of the transition (79 by upstream of the first CTG codon).

Submitted (MAY-1997) to the EMBL/GenBank/DDBJ datak
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
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NON_TER 114 114
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                                                                                                      InterPro; IPR002209; HBGF_FGF
Pfam; PF00167; FGF; 1.
                                                                                                                                                   EMBL; S81809; AAB21432.2; -. HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human)
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                                                                               ProDom;
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                                                                            PD000831;
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       114 AA;
                                 114
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                                                                         HBGF_FGF;
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Pred. No. 4.3
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          88DCA49C774D61AA CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 4.3e-28; ches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 114;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                               Euteleostomi;
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Search completed: Job time: 629 sec	AGS AGS	59;
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Search completed: June 7, 2002, 14:46:13 Job time: 629 sec	LPAI PAI	Query Match 39.6%; Score 328; DB 4; Length 1: Best Local Similarity 100.0%; Pred. No. 4.3e-28; Matches 59; Conservative 0; Mismatches 0; Indels
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2	Sees 	39 10 tiv
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<u></u>)PKR	id.
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	KNGC	39.6%; Score 328; DB 4; Length 114; 100.0%; Pred. No. 4.3e-28; Live 0; Mismatches 0; Indels
	75.51 75.51	3 4; 3e-2
	RIH	0; 1,8
	PDGI PDGI	engt Inc
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	1 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPH 59 	0; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq
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                                                                                                                                                                                                                                                    Ö
                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein search, using sw model
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length: 2000000000
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Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A_Geneseq_032802:*

1: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1980.DAT:*

2: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1981.DAT:*

3: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1982.DAT:*

3: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1983.DAT:*

4: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1984.DAT:*

5: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1985.DAT:*

6: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1986.DAT:*

7: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1986.DAT:*

9: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1988.DAT:*

7: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1988.DAT:*

9: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1988.DAT:*
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-802-365-8
826
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                                                                                                                                                                                                                                                                                                                                                                                                                                   | SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1990_DAT: *
| SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1990_DAT: *
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| SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1993_DAT: *
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MAAGSITTLPALPEDGGSGA......GSKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                                                    Length
  DВ
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16
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AAP70301
AAP94038
1 AAR05314
3 AAR22312
4 AAR40159
5 AAR800779
5 AAR70204
6 AAR70823
6 AAR70823
8 AAW133338
8 AAW195456
                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                Sequence of human Human basic fibrob Human basic fibrob bFGF truncated at Human bFGF peptide Fibroblast growth Human bFGF. Homo sapie Human fibronectin
                                                                                                                                                                                                                                                Description
                   Biologically activ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
AAP70301
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FGF orin	AAR43958 AAR91067	15 16	410 410		826 826
Saporin/FGF fusion	5	15	410	100.0	826
ded	AAR07076	11	211		826
_	AAB50706	22	210	•	826
fibrob	AAB50299	22	210		826
	AAB60695	22	210	•	826
	AAR06685	11	210	100.0	826
Human bFGF encoded	AAR05787	11	165		826
human fibroblast	AAU04006	22	158	•	826
	AAG78316	22	158	٠	826
C	AAU08594	Ν	158	•	826
Leaderless protein	AAW31664	œ	158		826
Sequence of human	AAP71085		157	•	826
Human basic fibrob	AAB50274	Ν	155	•	826
Ð	AAB61662	2	155	•	826
Truncated form of	AAY72909	Ν	155	•	826
Amino acid sequenc	AAB84597	22	155		826
muscle	AAG64847	22	155		826
	AAG64317	22	155	•	826
Human FGF-2 prote	AAB99918	22	155	100.0	826
Human fibroblast	AAB85813	22	155		826
Human fibroblast	AAE11976	22	155		826
Human fibroblast	AAG65648	22	155	•	826
\mathbf{r}	AAY32334	21	155	•	826
π	AAY90448	21	155	100.0	826
_	AAY90411	21	155	•	826
fibroblas	AAY96893	21	155		826
fibro	AAY96873	21	155		826
Fibroblast growth	AAB10298	21	155		826
18 kD isoform of	938	20	155	100.0	826
broblast grow	2	19	155		826
Ħ		19	155	0	826
Fibroblast growth	AAW75712	19	155	100.0	826

ALIGNMENTS

155

29-SEP-1986; 14-MAR-1986; 09-APR-1986; 09-OCT-1986; Key Peptide Protein (TAKE) TAKEDA CHEMICAL IND KK. EP237966-A. Homo sapiens wound healing Fibroblast growth promoter; mesoderm cell growth promoter; Sequence of human basic fibroblast growth factor (hbFGF). 05-JUN-1991 AAP70301; AAP70301 standard; Protein; 12-MAR-1987; 23-SEP-1987. T, Sasada R, (first entry) 86JP-0231428. 86JP-0057919. 86JP-0082699. 86JP-0241053. 87EP-0103601 10..155 Location/Qualifiers /note= "claimed" Iwane M, Igarashi ζ.

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RESULT
AAP94038
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Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     other mesoderm-derived cells and is useful for promoting healin wounds (eg burns), for prophylaxis and treatment of thrombosis arteriosclerosis, and as a promoter for cell anteriosclerosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human basic fibroblast growth factor - produced by recombinant DNA techniques, useful for healing wounds, prophylaxis, thrombosis and arteriosclerosis treatment, etc.
                                                                                                                                                                                                                                             Human basic fibroblast growth factor
                                                                                                                                                                                                                                                                                               AAP94038 standard; protein; 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig 1; 38pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB; AAN70494.
                        EP298723-A.
                                                   Domain
                                                                                                      Misc-difference
                                                                                                                                                         Misc-difference
                                                                                                                                                                                                                                                               25-JUN-1990
                                                                            Misc-difference
                                                                                                                                Misc-difference
        11-JAN-1989
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                                                                                                                                                                                                                             Basic
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                                                                                                                                                                                                                                                                                                                                                                                                             Match
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                                                                                                                                                                                                                                                                                                                                       TSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                                                                                                                                                                                     KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1987-265363/38.
                                                                                                                                                                                                            sapiens
                                                                                                                                                                                                                                                                                                                                                                            klqlqaeergvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrky
                                                                                                                                                                                                                             fibroblast growth factor; pUC9-TSF11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             produced using
                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                         /note="replaced 96
                                                                                                                                                                                   Location/Qualifiers 78
                                                                                                      /note="replaced 129
                                                                                                                                 128
                                                   note="replaced by 128..138
                                         /label=heparin-binding domain
                                                                  'label=Lys
                                                                                    /note="replaced
                                                                                             /label-Arg
                                                                                                                      'label=Lys
                                                                                                                                     note="replaced
                                                                                                                                                'label=Cys
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. hbFGF prom
                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 826; DB 8;
Pred. No. 2.9e-80;
; Mismatches 0;
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                                                                                                                                                                 Or.
                                                                                                               Glu"
                                                                                                                                        Ala"
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                                                                                                                                                                                                                            pUC9delH3-pTSF-3.
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and
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RESULT
AARO5314
ID AARR
XX AARO5314
AC AARC
XX AARO5314
AC AARC
XX Huma
XX Huma
XX Fib
XX Synt
XX WO90
XX WO91
XX WO91
AC O3-P
XX O3-P
XX O4-P
XX O4-P
XX O4-P
XX O4-P
PA (CH)
XX WPI.
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Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA encoding the sequence may be mutated to encode an analogue, of human basic fibroblast growth factor (bFGF) bFGF-C78/965, which has reduced affinity for heparin. One or more positively-charged As in the heparin-binding domain (AAs 128-138) are replaced by neutral or negatively-charged residues as indicated in the feature table. A recombinant vector (pUG9-TSF1) or pUG9delH3-pTSF-3) contg. the mutated DNA can be used to transform bacterial or mammalian host cells for prodn. of the analogue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Recombinant DNA encoding new fibroblast growth facto: analogues - useful eg for accelerating wound healing to control neovascularisation.
                                                                                    03-NOV-1989;
                                                                                                          17-MAY-1990
                                                                                                                                                    Synthetic
                                                                                                                                                                        Fibroblast
                                                                                                                                                                                            Human basic fibroblast growth
                                                                                                                                                                                                                                        AAR05314;
                                                                                                                                                                                                                                                            AAR05314 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; d 1-2; 44pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fiddes JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-JUL-1988;
                                                               04-NOV-1988;
                                                                                                                               WO9005184-A
                                                                                                                                                                                                                  10-OCT-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      See also AAP94038.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BIOT-) BIOTECHN RES ASSOC.
                                          (CHIR-)
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                                                                                                                                                                                                                                                                                                                                     TSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                                                                                                                                                                                                                                             155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155
                                                                                                                                                                        growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Abraham
                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
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                                                                88US-0267408
                                                                                     89WO-0004821
                                                                                                                                                                        factor; FGF;
                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English.
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                                                                                                                                                                                                                                                             155
                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 826; DB 10;
Pred. No. 2.9e-80;
; Mismatches 0;
                                                                                                                                                                                             factor
                                                                                                                                                                        yeast; ischaemia;
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0

WPI; 1990-178825/23

0;

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RESULT
AAR22232
ID 23-J
AC 24-C
AC AAR2
XX AAR2
XX AAR2
XX AAR2
XX Basi
KW Basi
KW Peps
XX W092
XX W09
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Best Local S
Matches 155
                  The peptide sequence was deduced from the synthetic DNA sequence prepd. as described in EP-363675. E. coli cells transformed with synthetic DNA were lysed and the supernatent purified, giving a synthetic DNA were lysed and the supernatent purified, giving a synthetic DNA were lysed and the supernatent purified, giving a solution of the amino acid
                                                                                                                                                                              heparin or cathepsin [
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Basic fibroblast growth factor; adduct; heparin; heperan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR22232 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FGF have applications such as in vivo nerve regeneration, wound repair ischaemia and corneal repair. They may also have therapuetic uses in the CNS and PNS in treatment of cell death and neuronal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; ; p; English.
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senescence, neuronal regression
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                                                                                                                                                                                                                        Prepn.
                                                                                                                                                                                                                                                                         WPI; 1992-080021/10
                                                                                                                                                                                                                                                                                                                                                                                                            02-AUG-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            W09202539-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pepsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bFGF truncated at its N-terminus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              reggression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yeast prodn. of human basic
    sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-JUL-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-FEB-1992
                                                                                                                                                                                                                                                                                                                                                                (FARM )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    al Similarity
155; Conserv
                                                                                                                                                                                                   of basic fibroblast growth factor - by n or heparan sulphate and cleaning with
                                                                                                                                                                                                                                                                                                                   φ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ą;
                                                                                                                                                                                                                                                                                                                                                                FARMITALIA C ERBA SRL.
    of the
                                                                                                                                    Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    155
                                                                                                                                                                                                                                                                                                                   Paul F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                  27;
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                                                                                                                                                                                                                                                                                                                                                                                                            90GB-0017008.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      91WO-EP01428
155 residue form (Abraham
                                                                                                                                36pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein; 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D; wounds; burns.
                                                                                                                                                                                                                                                                                                                   Betbeder D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 826; DB 11;
Pred. No. 2.9e-80;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful eg. for treating cell and cell death.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acidic fibroblast growth factor useful eg. for treating cell
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                                                                                                                                                                                                                                                                                                                   Sarmientos
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    et al.,
                                                                                                                                                                                                                                                                                                                   ₽;
                                                                                                                                                                                                   forming adduct pepsin A or
    Science,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
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    233,
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RESULT
AAR401:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548, 1986) shown here but without the N-terminal Met; and a 153 residue bFGF (3-155). An adduct of bFGF formed with heparin or heperan sulphate contg. the bFGF 9-10 Leu-Pro bond can be cleaved with pepsin A or cathepsin D to cleave this bond and release a peptide with the N-terminus be deleted up to and including residue 9, sequentially. This cleavage method can be used to obtain a pure form of the 146 amino acid bFGF (10-155) bFGF. The prod. can be used to treat wounds and burns.
                                                                                                                     Synthetic functional polypeptide to promote wound contg. cell adhesion polypeptide from fibronectin growth factor polypeptide, opt. linked by spacer
                                               The and the
                                                                                                                                                                           N-PSDB;
                                                                                                                                                                                        WPI;
                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                               Human; fibronectin; FN; fibroblast cell growth factor; FGF;
fusion; cell adhesion; cell growth; anti-aging; cosmetics;
                                                                                                                                                                                                                                                                                                                                                                                                                                              07-FEB-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR40159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR40159 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                 Disclosure;
                                                                                                                                                                                                               (TAKI ) TAKARA SHUZO
                                                                                                                                                                                                                                        14-OCT-1991;
                                                                                                                                                                                                                                                                 05-MAR-1992;
                                                                                                                                                                                                                                                                                          20-JUL-1993.
                                                                                                                                                                                                                                                                                                                   JP05178897-A.
                                                                                                                                                                                                                                                                                                                                                                    wound
                                                                                                                                                                                                                                                                                                                                                                                                                    Human bFGF peptide fragment
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                                 sequences given in AAR40158-63 represent human fibronectin (Fi fibroblast cell growth factor (FGF) fragments which were used production of fusion polypeptides which are able to stimulate adhesion and cell growth. These fusion peptides may be used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     σ
                      anti-aging
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         maagsittlpalpedggsgafppghfkdpkrlycknggfflrihpdgrvdgvreksdphi
                                                                                                                                                                                        1993-261656/33.
                                                                                                                                                                                                                                                                                                                                           sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             klqlqaeergvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrky
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                al Similarity
155; Conserv
                                                                                                                                                                                                                                                                                                                                                                healing;
                                                                                                                                                                          AAQ46943.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155
                                                                                               Page 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
                       cosmetics
                                                                                                                                                                                                                                                                                                                                                                   surgery.
                                                                                                                                                                                                                                        91JP-0291959
                                                                                                                                                                                                                                                                 92JP-0083220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide;
                                                                                               13pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                CO LTD
                       and
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                       in wound
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Pred. No. 2.9e-80;
; Mismatches 0;
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                      healing after
                                                                                                                                     healing, etc.
and fibroblast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
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                       surgery
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Sequence

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RESULT
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                        proteins are useful for targetting saporin (a cytotoxin) to a cell carrying the FGF receptor. Targetted agents (TA) other than saporin which may be used include in partic. DNA encoding a therapeutic protein, antisense DNA or other cytotoxic agent. The linker sequence within the fusion protein may increases serum stability or intracellular availability of the TA. The conjugates of the invention are used to inhibit cell proliferation in cells carrying the particular growth factor receptor; also when TA is DNA it can be used to deliver this to cells (for gene therapy). A specific application is to prevent excessive proliferation of epithelial cells, fibroblasts and keratinocytes in the anterior eye after surgery, partic, to prevent recurrence of pterygii after surgery are moved. Closure of the target of the surgery are moved.
trabeculectomy after glaucoma surgery and corneal clouding after excimer laser treatment. Other conditions which may be treated in tumours, restenosis, psoriasis, Dupuytren's contracture, diabetic
                                                                                                                                                                                                                AAR80776-84 are fibroblast growth factors (FGF) FGF-1 to rur-y respectively. DNA encoding these fibroblast growth factors can be used to create an FGF/saporin fusion protein. DNA encoding such fu
                                                                                                                                                                                                                                                                                                                         New conjugates of growth factor receptor ligand and targetted agent - partic. DNA or cytotoxin, used to control cell proliferation in the eye, e.g. to prevent growth of pterygii and corneal clouding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conjugate; fibroblast growth factor; FGF; cell proliferation; regulation; pterygia; psoriasis; rheumatoid arthritis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          W09524928-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13-MAY-1996
                                                                                                                                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1995-336820/43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-MAR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR80777
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155; Conserv
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                                                                                                                                                                                                                                                                                              33; Page 141; 204pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIZM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                     Houston LL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     PHARM INC
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94US-0213446.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95WO-US03448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  factor 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                      Nova
                                                                                                                                                                                                                                                                                              English
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Pred. No. 2.9e-80;
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                                                                                                                                                                                                                                                                                                                                                                                                                      Sosnowski BA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cytotoxin; saporin; eye;
corneal clouding; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155;
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Matches

Similarity

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          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 155;
                                                                   Growth and/or proliferation of neuronal precursor cells in an ani is obtained by admin. of a proliferation factor comprising at lea a portion of a growth factor, e.g. human basic fibroblast growth factor, whose sequence is given in AAR70204 and gene in AAQ83522.
                                                                                                                                       New conjugates for crossing the blood brain barrier - a neurological agent linked to a transport factor compleast a portion of a growth factor
                                                                                                                                                                                  N-PSDB;
                                                                                                                                                                                                                                                                                                                           W09507092-A.
                                                                                                                                                                                                                                                                                                                                                                Basic fibroblast growth neuronal precursor cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complications, Kaposi's sarcoma and rheumatoid arthritis
                                                 Sequence
                                                                                                                                                                                                                Black IB,
                                                                                                                                                                                                                                                       10-SEP-1993;
22-DEC-1993;
                                                                                                                                                                                                                                                                                    11-AUG-1994;
                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                 Human bFGF
                                                                                                                                                                                                                                                                                                                                                                                                                   21-SEP-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR70204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR70204 standard; Protein; 155
                                                                                                                                                                                                                                   (UYNE-) UNIV
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                                                                                                                                                                                 1995-123234/16.
DB; AAQ83522.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \verb|maagsittlpalpedggsgafppghfkdpkrlycknggfflrihpdgrvdgvreksdphi|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
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                                                  155
                                                                                                                                                                                                                 Dicicco-Bloom
100.0%; ilarity 100.0%; Conservative
                                                                                                                      Fig.1; 53pp;
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93US-0171297.
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neurological
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Pred. No. 2.9e-80;
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Pred. No. 2.
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DB 16;
2.9e-80;
es 0;
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RESULT
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                                                                                                                   Query Match
Best Local S
Matches 155
                                                                                                                                                                            may be used, pref. muteins in which at least I Cys residue is replaced by conservative Ser substitutions. The fusion protein are potent cytocidal agents to cells bearing the FGF receptor.
                                                                                                                                                                                                                                                                                                                              Baird
                                                                                                                                                                                                                                                                  New monogenous preparations of cytotoxic conjugates and DNA contain fibroblast growth factors and cytotoxic agents for treating FGF conditions such as tumours, diabetes and rheumatoid
                                                                                                                                                                                                                                                                                                                                                                                                                                09-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGF-2; fibroblast growth factor; cytotoxic conjugate; fusion protein;
saporin; cytostatic; tumor; diabetes; rheumatoid arthritis.
                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                     Disclosure; Page 109-110; 128pp; English.
                                                                                                                                                                                                                                                                                                           WPI; 1995-082038/11.
                                                                                                                                                                                                                                                                                                                                                                              02-AUG-1993;
29-OCT-1993;
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                                                                          KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
          TSWYVALKRTGQYKLGSKTGPGQKAILFLFMSAKS
                                               KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
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tswyvalkrtgqyklgsktgpgqkailflpmsaks
                                      klqlqaeergvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrky
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WHITTIER INST D
                                                                                                                             Similarity
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                                                                                                                   Conservative
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93US-0145829
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein;
                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                              Sosnowski BA;
                                                                                                                                                                                                                                                                                                                                                DIABETES & ENDOCRINOLOGY.
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                                                                                                                 Score 826; DB 16;
Pred. No. 2.9e-80;
0; Mismatches 0;
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                                                                                                                                                                                       fusion proteins FGF receptor.
                                                                                                                   Indels
                                                                                                                                    Length 155;
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RESULT
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Best Local Similarity
Matches 155; Conserv
                                                                                                                                                                                                                                                              The present sequence is a human fibronectin amino-terminal oligopeptide, which was used in the development of a novel method for increasing the efficiency of gene introduction into a target cell using a retroviral vector. The method comprises carrying out viral infection of the target cell in the presence of a retrovirus and target cell binding substance or substances. The method can be used to effectively introduce genes into target cells for the gene therapy of cancer and viral diseases, e.g. AIDS.
                                                                                                                                                                                                                                                                                                                                                                                                      Method for increasing efficacy of gene transfer to target cell using retrovirus - by infection of the target cell in the presence of a substance which binds to the virus and a substance which binds to the target cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW33338 standard;
                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                 Claim 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1997-289294/26.
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13-NOV-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           viral disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human fibronectin amino-terminal oligopeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW33338;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ueno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TAKI ) TAKARA SHUZO CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Amino-terminal; human fibronectin; target cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Asada K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-MAY-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       transfection;
                                  121
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                                                                                                                                            1 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                             KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                sapiens
                              TSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 155
                                                                                klqlqaeergvvsikgvcanrylamkedgrllaskcvtdecffferlesnnyntyrsrky
                                                                                                                                                                                                                                                                                                                                                                             Pages 93-94; 194pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hashino K,
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                                                                                                                                                                                  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       retroviral vector;
                                                                                                                                                                                                                                              AA;
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95JP-0294382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96WO-JP03254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acquired immunodeficiency syndrome; AIDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein;
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                                                                                                                                                                                           100.0%;
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                                                                                                                                                                               0;
                                                                                                                                                                               Score 826; DB 18;
Pred. No. 2.9e-80;
; Mismatches 0;
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AAW19595 ID AAW

AAW19595

standard;

Protein; 155

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Matches 155
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30-MAY-1986;
30-MAR-1992;
01-APR-1994;
                                                                                                                                                                                                       AAW19595 is a biologically active recombinant human basic fibroblast growth factor (bFGF). The protein is free from all infectious impurities, substances that normally accompany it and from post-translational modification of Cys residues of native human bFGF. Recombinant bFGF is used to promote healing of wounds, bone fractures, damaged myocardial tissue etc. and, since it increases neuronal survival and promotes neurite outgrowth, may also be used in treatment of neurological disorders such as Alzheimer's and Parkinson's diseases. bFGF may also be used for detection of specific inhibitors; for treatment of cell cultures in vitro before transplant and for inducing release of tissue plasminogen activator or collagenase, e.g. for treatment of a chronic tendency to form embolism. Recombinant bFGF can be produced on a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biologically active recombinant basic fibroblast growth factor
                                                                                                                                                                                                                                                                                                                                                                                Claim 2;
                                                                                                                                                                                                                                                                                                                                                                                                        diseases, suitable for production
                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB; AAT71231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-MAY-1987;
12-SEP-1985;
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                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                  New high
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (SCIO-)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             neurodegenerative disease; Parkinson's; Alzheimer's
bone fracture; biologically active; embolism.
                                                                                                                                                                                               arge scale.
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                                                                                                                                                                                                                                                                                                                                                                                                                      promoting
KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                               MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1997-234676/21.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fibroblast growth factor; basic;
                                                   maagsittlpalpedggsgafppghfkdpkrlycknggfflrihpdgrvdgvreksdphi
                                                                                                       155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SCIOS
                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                       purity, recombinant human basic fibroblast growth factor oting wound healing and treating neuro:degenerative , suitable for production on large scale
                                                                                                                                                                                                                                                                                                                                                                              Fig 4; 34pp; English.
                                                                                                                                                                       155
                                                                                                    100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INC.
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85US-0775521.
85US-0809163.
86US-0869382.
92US-0860688.
94US-0221462.
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10..155
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                                                                                                       0;
                                                                                                    Score 826; DB 18;
Pred. No. 2.9e-80;
Mismatches 0;
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                                                                                                       Indels
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disease;
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RESULT 1
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RESULT 1
AAW75712
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Matches 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This sequence represents a fibronectin receptor that can be used the method of the invention. The method is for the control of humannodeficiency virus (HIV) infection using a composition which comprises a functional substance which participates in the infect HIV. The method is used to control HIV-infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI;
     Fibroblast growth factor-2;
                                                Fibroblast growth
                                                                                                                                                                                                AAW75712 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Control of human immunodeficiency virus infection - using composition comprising replication defective HIV vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-JUL-1999
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                                                                                                                                                  AAW75712;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fibronectin receptor; HIV; infection; therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fibronectin receptor targetting
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155; Conserv
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                                                  factor-2.
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     FGF-2;
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Pred. No. 2.9e-80;
Mismatches 0;
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  basic fibroblast growth factor;
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0;

bFGF; mutein; protein engineering; heparin; thrombosis; thromocytopenia; ophthalmic disorcer; human; therapy.

100.0%;

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This is the amino acid sequence of fibroblast growth factor-2 (FGF-2), or basic fibroblast growth factor (bFGF). Claimed DNA molecules of the invention encode FGF mutein polypeptides (see AAW75711-20) that show reduced FGF receptor binding activity but which retain the ability to bind heparin. For FGF-2, amino acid
                                   Cys-78 and Cys-96 residues to reduce aggregation. The mutein is obtained by site-specific or site-directed mutagenesis of FGF-2 DNA, incorporation of the mutated DNA into a vector and expression in host cells. The FGF muteins are used to treat heparin-related disorders, such as excessive bleeding induced by heparin, ophthalmic disorders and heparin-associated thrombocytopenia and thrombosis. They may also be used for drug design, especially
                                                                                                                                which retain the ability to bind heparin. For FGF-2, amino acid residues 95, 101 or 104 are preferably replaced by other amino acid residues, with an optional further replacement of the Glu-96 residue. The mutein may be further modified by replacement of the
                                                                                                                                                                                                                                                               Disclosure; Page 53; 71pp; English.
                                                                                                                                                                                                                                                                                            Fibroblast growth factor mutein and DNA - having reduced receptor binding and able to bind heparin, useful for treating and regulating heparin-related disorders e.g. thrombosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-MAR-1998;
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                          antagonists
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Asn-104 may be replaced by another amino acid (Claim 1), preferably Ala, Phe, Ser Gly, Met, Leu or Tyr, especially Ala, Gl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Phe-95 is replaced by another amino a acid (Claim 3), preferably Ala, Phe,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acid (Claim
Gly, Met, Le
or Ser"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Asn-101 may be replaced by another amino acid (Claim 2), preferably Ala, Phe, Ser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "amino acid residues +1 to +145"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acid (Claim 3), preferably Ala, Phe, Gly, Met, Leu or Tyr, especially Ala,
                                                                                                                                                                                                                                                                                           e.g. thrombosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ser"
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n 7), preferably Ala, Gly or :
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100.0%;

Score 826;

DB

19;

Length 155

Sequence

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AAW71379
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                                                                               (FGF-2), a leaderless protein. A leaderless protein refers to a protein that is found in an extracellular environment, but lacks a canonical leader sequence. The specification describes a method for inhibiting export of a leaderless protein from a cell. The method comprises treating the cell with an agent that inhibits binding between the leaderless protein and a transport molecule. Treatment with the inhibiting agent is specifically used to treat angiogenesis and restenosis, i.e. where expression of FGF-2 is inhibited, and the agent is applied to endothelial or smooth muscle cells. Other applications are treatment of tumours
                                                                                                                                                                                                                                                                                         Inhibiting export of leaderless protein with agent that inhibits binding to transporter protein - especially for treating angiogenesis and restenosis by preventing export of fibroblast growth factor, also methods for identifying leaderless proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  export; angiogenesis; restenosis; treatment; timour; cell proliferation; diabetes; retinopathy; infection; polycystic kidney disease; atherosclerosis.
                                       (melanoma, teratocarcinoma, ovarian carcinoma, bladder cancer and neuroblastoma), inflammation, cell proliferation, complications of diabetes (e.g. retinopathy), viral, bacterial or fungal infections,
                                                                                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                                                                                    N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                             Baird A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-SEP-1998
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                           polycystic
                                                                                                                                                                                                                                                                            their transporters
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                                                                                                                                                                                                                                                Pages 55-56;
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                           kidney disease and
                                                                                                                                                                                                                  sequence represents 18 kDa form
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                                                                                                                                                                                                                                               116pp; English.
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hes 0;
                                                                                                                                                                                                                   of fibroblast growth factor-2
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Best Local
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                                                         Matches
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Best Local S
                                                                                                                                        Fibroblast growth factor (FGF) proteins (AAW53022-W53024 and AAW53029-W53033) are members of the fibroblast growth factor family and have homology to Fibroblast growth factor homologous factor (FHF) proteins. The FHF proteins (FHF 1-4) are involved in regulating the growth, survival, and differentiation of cells in the central nervous system, as well as cells in peripheral nervous tissues. The proteins creating and diagnosing conditions involving the nervous system. FHF's can also be used in methods for maintaining cultured cells or tissues or to promote neuron growth in vitro.
                                                                                                                                                                                                                                                                                      New fibroblast growth factor homologous factors - useful for, e.g. developing products for diagnosis and treatment of conditions involving neuro-degenerative and neoplastic disorders
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW53023;
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                                                                                                                                                                                                                                                                Disclosure; Page 51-52; 94pp; English.
                                                                                                                                                                                                                                                                                                                                                              Nathans J,
                                                                                                                                                                                                                                                                                                                                                                                                              30-AUG-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                      27-AUG-1997;
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      <u>س</u>
       MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
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                                                                    Similarity
                                                                                                                    155
                                                                                                                                                                                                                                                                                                                                                                Smallwood PM;
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Pred. No. 2.9e-80;
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                                                                    Score
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                                                         e 826; DB 19;
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smatches 0;
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                                                                                                                      including inhibiting nuclear localisation, modulating protein trafficking of nuclear proteins such as FGF (in vitro or in vivo), identifying further trafficking components, and treating a variety of conditions associated with nuclear trafficking. The 24, 23 and 22 kD isoforms of FGF2 are nuclear proteins whereas the 18 kD isoform is not but is secreted. Inhibiting the nuclear transport of FGF-2 allows the control of undesired proliferation and inflammation, particularly tumour growth. Increasing export of FGF can promote angiogenesis. In addition, use of inhibitors of nuclear localisation can limit or eradicate viral (e.g. HIV
                                                                                                                                                                                                                                                                                                   This sequence represents the 18 kD isoform of the human fibroblast growth factor 2 (FGF2). The invention relates to inhibiting nuclear localisation of a nuclear protein in a cell, by administering an inhibitor of nuclear
                                                                                                                                                                                                                                                                                                                                                                                                Inhibiting nuclear localisation of proteins - used for controlling cellular functions, e.g. undesired proliferation and inflammation, particularly tumours, and treating viral infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; fibroblast growth factor; translational start site; isoform; inhibition; nuclear localisation; nuclear trafficking component; proliferation; inflammation; tumour growth; angiogenesis.
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N-PSDB; AAX25738.
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                                                                                                                                                                                                                                                                     trafficking components. Interrupting the interaction of trafficking components and nuclear proteins may be used in a variety of applications.
                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Page 42; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-JUL-1997;
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      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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Copyright (c) 1993 - 2000 Comp
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ALIGNMENTS

basic fibroblast growth factor precursor, 22.5K form - human N;Alternate names: bFGF; fibroblast growth factor 2; prostatic growth factor; prostating. Contains: basic fibroblast growth factor, 18K form 1; A25824; , P.; Chalc

C;Species: Homo sapiens (man)
C;Date: 31-Jul-1999 #sequence_revision 31-Dec-1993 #text_change 21-Jul-2000
C;Date: 31-Jul-1999 #sequence_revision 31-Dec-1993 #text_change 21-Jul-2000
C;Accession: A32398; A61537; A26642; B32878; S00297; A54316; B54316; A33624; A25824
R;Prats, H.; Kaghad, M.; Prats, A.C.; Klagsbrun, M.; Lelias, J.M.; Liauzun, P.; Cha
Proc. Natl. Acad. Sci. U.S.A. 86, 1836-1840, 1989
A;Title: High molecular mass forms of basic fibroblast growth factor are initiated A;Reference number: A32398; MUID:89184522
A;Accession: A32398; MUID:89184522 þу

A; Molecule type: mRNA A; Residues: 1-210 < PRA>

A;Cross-references: GB:J04513; NID:g183083; PIDN:AAA52531.1; PID:g459811 R;Shibata, F.; Baird, A.; Florkiewicz, R.Z. Growth Factors 4, 277-287, 1991 A;Title: Functional characterization of the human basic fibroblast growt A;Reference number: A61537; MUID:92110035 A;Accession: A61537 human basic fibroblast growth factor gene

A;Accession: A61537 A;Molecule type: DNA A;Residues: 1-114 <SHI>

A:Note: authors translated the codon GGA for residue 47 as Ala R:Kurokawa, T.; Sasada, R.; Iwane, M.; Igarashi, K. FEBS Lett. 213, 189-194, 1987
A:Title: Cloning and expression of cDNA encoding human basic fibroblast growth factor A:Reference number: A26642; MUID:87162468
A:Accession: A26642

A;Molecule type: mRNA
A;Residues: 56-210 <KUR>
A;Residues: 56-210 <KUR>
A;Residues: 56-210 <KUR>
A;Cross-references: GB:M27968; NID:g182562; PIDN:AAA52448.1; PID:g182563
A;Cross-references: GB:M27968; NID:g182562; PIDN:AAA52448.1; PID:g182563
R;Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Fiddes, J.C.
Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
A;Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organizat
A;Reference number: A90924; MUID:87217066
A;Accession: B32878

A; Accession. A; Accession A; Accession and A; Residues: 56-210 <ABR>
A; Residues: 56-210 <ABR>
A; Residues: 56-210 <ABR>
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A; Residues: 56-210 <ABR>
A; Residues: 56-210 <ABR
A; Friedman, J.A; Gospodarowicz, D. R; Abraham, J.A; Gospodarowicz, D. R; A; Title: Human basic fibroblast growth factor: nucleotide sequence and genomic organiant control of the A;Reference number: S00297; MUID:87053817
A;Accession: S00297
A;Status: not compared with conceptual translation

A;Molecule type: DNA
A;Residues: 1-155 <AB2>
A;Note: the authors translated the codon GAA for residue 108
A;Note: the authors translated the codon GAA for residue 108
R;Shimoyama, Y; Gotoh, M; Ino, Y; SaKamoto, M; Kato, K;
Jpn. J. Cancer Res. 82, 1263-1270, 1991 as Gly Hirohashi, ß

Characterization of high-molecular-mass forms of basic fibroblast growth fac

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A; Molecule type: protein
A; Residues: 65-88, 'x',90-98, 'X',100 <GAU>
R; Sommer, A; Brewer, M.T.; Thompson, R.C.; Moscatelli,
Biochem. Biophys. Res. Commun. 144, 543-550, 1987
A;Title: A form of human basic fibroblast growth factor
A; Reference number: $42242
A; Accession: $42242
A; Status: preliminary
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A; Molecule type: protein
A; Residues: 'XX', 86-88,'X', 90-91,'X', 93-95 <SH3>
A; Residues: 'XX', 86-88,'X', 90-91,'X', 93-95 <SH3>
A; Experimental source: C-Li21 hepatocellular carcinoma cell line
A; Experimental source extracted from NCBI backbone (NCBIP:71595)
                                                                                                                                                                                                                                                                                                                                                                       A;Title: Multivalent ligand-receptor binding A;Reference number: A55784; MUID:94347757 A;Accession: B55784
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A;Title: Human brain-derived acidic and basic fibroblast growth A;Reference number: A90122; MUID:86186784
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                                                              A; Experimental source: granulosa cells R; Patry, V.; Bugler, B.; Amalric, F.;
                                                                                                                                                                                            A; Reference number:
A; Accession: I52267
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Gautschi, P.; Frater-Schroder, M.; Bohlen, FEBS Lett. 204, 203-207, 1986
A;Title: Partial molecular characterization
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A; Residues: 'XXX',19,'X',21-29 <SH2>
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                                        FEBS Lett. 349,
                                                                                                         A;Residues: 95-182 <RES>
A;Cross-references: GB:S47380; NID:g256535; PIDN:AAD13853.1;
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                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein A; Residues: 54-71 < PAN>
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t. 349, 23-28, 1994

Purification and characterization nce number: $46253; MUID:94320639
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D.; Fryburg, K.; Farris, J.; Cous
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B.A.; Van Dyk, D.I
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A; Residues: R; Ueno, N.;
                    A; Molecule type: protein A; Residues: 16-35 <BER>
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Science 233, 545-548, 1986
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A;Cross-references: GDI
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A; Residues: 3-157 <ABR>
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A;Start codon: CTG
C;Superfamily: fibroblast growth factor
C;Superfamily: fibroblast growth factor; angiogenesis; growth factor; heparin binding; C;Keywords: alternative initiators; angiogenesis; growth factor; heparin binding; E;1-210/Product: basic fibroblast growth factor, 22.5K form #status predicted <MAT>
F;65-210/Product: basic fibroblast growth factor, 18K form #status predicted F;62-86/Region: heparin binding #status predicted
F;171-174/Region: heparin binding #status predicted
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176 TSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
                                                                                                         116 KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY
                                                                                                                                                                                                                 56 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 115
                                                                                                                                                                                                                                                                    1 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
                                             TSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 155
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Mismatches 0;
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R;Bertolini, J.; Hearn, M.T.W.
Mol. Cell. Endocrinol. 51, 187-199, 1987
A;Title: Isolation, characterisation and A;Reference number: A61550; MUID:87247652
A;Accession: A61550 A; Molecule type: mRNA A; Residues: 3-157 < AB2> R; Milner, P. G.; Li, Y.S.; Hoffman, R.M.; Kodner, C.M.; Biochem. Biophys. Res. Commun. 165, 1096-1103, 1989 A; Title: A novel 17 kD heparin-binding growth factor (FA; Reference number: A33784; MUID: 90121211 A; Reference number: A33784; MUID: 90121211 A;Cross-references: GB:M13440; NID:g163049; PIDN:AAA30518.1; PID:g16 A;Experimental source: pituitary gland R;Abraham, J.A.; Whang, J.L.; Tumollo, A.; Mergia, A.; Fiddes, J.C. Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986 A;Title: Human basic fibroblast growth factor: nucleotide sequence, A;Reference number: A90924; MUID:87217066 A;Title: Nucleotide sequence of a bovine clone encoding the A;Reference number: A94290; MUID:86261806 A;Accession: A24663 A;Note: demonstration of a possible alternative R;Bertolini, J.; Hearn, M.T.W. C;Species: Bos primigenius taurus (cattle)
C;Date: 13-Aug-1986 #sequence_revision 02-Jun-1995 #text_change 24-Nov-1999
C;Accession: A24663; A32878; A33784; A61550; A61551; A60310; A61094; A01386;
R;Abraham, J.A.; Mergia, A.; Whang, J.L.; Tumolo, A.; Friedman, J.; Hjerrild. rowth factor precursor - bovine (fragment)
bFGF; kidney-derived growth factor; prost tissue localisation initiator (HBGF-8) Siegel, prostatropin or angiogenic protein, of. splice PID:g163050 in N.R.; an bovine uterus: purif N-terminal-truncat junction genomic organizat Hjerrild, Deuel, A60316; K.A.; G

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A; Residues: 12-26-30H5

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Regul. Pept. 16, 135-145, 1986
A; Title: Purification and partial characterization
A; Title: Purification and partial characterization
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A;Title: Isolation and partial molecular characterization of pituitary A;Reference number: A22054; MUID:84298139
A;Accession: A22054
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A;Residues: 12-157 <ESC>
A;Residues: 12-157 <ESC>
A;Resperimental source: pituitary gland
R;Baird, A.; Esch, F.; Boehler, P.; Ling, N.; Gospodarowicz, D.
Regul. Pept. 12, 201-213, 1985
A;Title: Isolation and partial characterization of an endothelial cell growth factor
A;Reference number: A60316; MUID:88095426
A;Accession: A60316
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A;Note: the amino end of this form was blocked;
R;Gospodarowicz, D; Baird, A; Cheng, J; Lui.
Endocrinology 118, 82-90, 1986
A;Title: Isolation of fibroblast growth factor
A;Reference number: A61094; MUID:86081530
A;Accession: A61094
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A; Residues: 27-35, 'X', 37-43 <BAI>
A; Experimental source: kidney
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A; Title: Primary structure of bovine pituitary basic fibroblast A; Reference number: A01386; MUID:86016731
A; Accession: A01386
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A;Title: Isolation and partial characterization of basic fibroblast
A;Reference number: A61551; MUID:87162856
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A; Residues: 12-25,27-35,'X',37-40 <GOS>
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A; Residues: 23-35, 'X', 37-42 <UEN>
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A; Residues: 27-35, 'X', 37-41 <UE3>
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Best Local Similarity
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98.78;
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                                                                    Score 817; pb
Pred. No. 2.3e
1; Mismatches
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J.; Lui,
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C37360
basic fibroblast growth factor -
C;Species: Mus musculus (house mc
C;Date: 17-Apr-1993 #sequence_rev
C;Accession: C37360
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A;Cross-references: EMBL:x61697; NID:g56143; PIDN:CAA4386
C;Superfamily: fibroblast growth factor
C;Keywords: growth factor
F;1-9/Domain: signal sequence #status predicted <SIG>
F;10-154/Product: basic fibroblast growth factor #status
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: Nucleotide sequence of rat basic A;Reference number: S00876; MUID:88262516 A;Accession: S00876
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N, Alternate names: bFGF
C; Species: Rattus norvegicus (Norway rat)
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A; Residues: 1-154 <SH
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A; Residues: 35-154 <ELH>
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Nucleic Acids Res.
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                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                           1 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
                  TSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
                                                                                 SSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
                                                                                                                          KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                                                       MAAGSITSLPALPEDGG-GAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHV
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es. 16, 5201,
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7, 256-263, 1
                                                                                                                                                                                                                                                                             Score 798.5; DB 2
Pred. No. 1.5e-71;
                                                                                                                                                                                                                                                        Mismatches
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Y.; Shiu, R.P.C.
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1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIDN:CAA43863.1;
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154
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                                                                                                                                                                                                                                                                                                                                                                   predicted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        basic fibroblast
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                                                                                                                                                                                                                                                    Gaps
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#sequence_revision

17-Apr-1993

#text_change 16-Jul-1999

mouse)

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basic fibroblast growth factor - short-tailed C;Species: Monodelphis domestica C;Date: 20-Feb-1995 #sequence_revision 20-Feb-C;Accession: S31622 R;Kusewitt, D.F.; Sabourin, C.L.K.; Budge, C.I
                                                                                RESULT
S31622
                                                                                                                                                                                                                                                                                                                                                                                                                               A:Molecule type: protein
A:Residues: 1-146 <SIM>
C:Superfamily: fibroblast growth factor
C:Keywords: growth factor; heparin binding; mitogen
F:18-22/Region: heparin binding #status predicted
F:107-110/Region: heparin binding #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
S00185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Reference number: A37360; MUID:90201563
A;Accession: C37360
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N; Alternate names: prostatropin
C; Species: Ovis orientalis aries, Ovis
C; Date: 10-Sep-1999 #sequence_revision
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A;Residues: I-154 <HEBA
A;Cross-references: GB:M30644; NID:g193296;
C;Superfamily: fibroblast growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Hebert, J.M.; Basilico, C.;
Dev. Biol. 138, 454-463, 1990
A;Title: Isolation of CDNAs er
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Accession: S00185
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N;Alternate
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Best Local S
Matches 143
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Best Loca
Matches
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                                                                                                                                                                   TGQYKLGSKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                     GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYSSWYVALKR
                                                                                                                                                                                                                                      GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR
                                                                                                                                                                                                                                                                                                    PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                                     TGQYKLGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                                   PALPEDGGSSAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
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97.9%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                   Score 770; DB 1;
Pred. No. 9.1e-69;
1; Mismatches 2
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10-Sep-1999
                                    20-Feb-1995 #text_change
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#text_change 10-Sep-1999
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                                                                                                                                                                                                                                                                                                                                                                                     Length 146;
                                                                   (Monodelphis domestica)
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A; Residues: 95-128 <MIT>
A; Cross references: EMBL: X56804;
C; Superfamily: fibroblast growth
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A;Description: Characterization of cDNA encoding basic
A;Reference number: S31622
A;Accession: S31622
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Expression of alternatively spliced A; Reference number: A48834; MUID:93246053 A; Accession: A48834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Borja, A.Z.; Meijers, C.; Ze
Dev. Biol. 157, 110-118, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      basic fibroblast growth factor - chicken
C;Species: Gallus gallus (chicken)
C;Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 16-Jul-1999
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A; Residues: 1-164 < KUS>
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                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Experimental source: embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Residues: 1-189 <BOR>
                                                                                                                                                                                         Query Match
Best Local S
Matches 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
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Best Local Similarity
156
                            122
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                                                                                                                          SWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YTSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRK 119
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DWYVALKRTGQYKPGPKTGPGQKAILFLPMSAKS
                                                             LQLQAEERGVVSIKGVSANRFLAMKEDGRLLALKCATEECFFFERLESNNYNTYRSRKYS
                                                                              LQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YSNWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 164
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                                                                                                                                                                                           al Similarity
142; Conser
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92.2%;
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92.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                        from NCBI backbone (NCBIN:131000,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zeller,
                                                                                                                                                                                             5.
                                                                                                                                                                                                                                                                           NID:g62855; PIDN:CAA40139.1; PID:g62856 factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5; Mismatches
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                                                                                                                                                                                           Score 759; DB 2; I
Pred. No. 1.5e-67;
5; Mismatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 760.5; DB Pred. No. 9e-68;
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189
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Carrier fibroblast growth factor - African clawed frog C; Species: Xenopus laevis (African clawed frog) C; Species: Xenopus laevis (African clawed frog) C; Species: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999 C; Accession: A40117; A29618 R; Kimelman, D.; Abraham, J.A.; Haaparanta, T.; Palisi, T.M.; Kirschner, M.W. Science 242, 1053-1056, 1988 A; Title: The presence of fibroblast growth factor in the frog egg: its role as a A; Reference number: A40117; MUID:89058621 A; Reference number: A40117; MUID:89058621 A; Reference number: MA0117; MUID:89058621 A; Cross-references: GB:M18067; NID:9214177; PIDN:AAA49726.1; PID:9214178; GB:M21 A; Cross-references: GB:M18067; NID:9214177; PIDN:AAA49726.1; PID:9214178; GB:M21 C:Il 51, 869-877, 1987 A; Title: Synergistic induction of mesoderm by FGF and TGF-beta and the identific: A; Reference number: A29618; MUID:88052890 A; Accession: A29618 A; MUID:88052890 A; Accession: A29618 A; MUID:88052890 C; Superfamily: fibroblast growth factor C; Keywords: growth factor
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A;Molecule type: mRNA
A;Residues: 1-137 <WIN>
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c;Species: oryctolagus cuniculus (domestic rabbit)
c;Date: 14-Feb-1997 #sequence_revision 14-Feb-1997 #text_change 16-Jul-1999
C;Accession: I46711
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                     KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
                                                                            MAAGSITTLPTESEDGGNTPFSPGSFKDPKRLYCKNGGFFLRINSDGRVDGSRDKSDSHI 60
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83.9%;
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Pred. No. 1.2e-65;
1; Mismatches 0
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Pred. No. 1
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                                                                                                                                                                  DB 1; 1
1.5e-60;
hes 16;
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acidic fibroblast growth factor - golden hamster
N;Alternate names: heparin-binding growth factor 1
C;Species: Mesocricetus auratus (golden hamster)
C;Acces: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: A60721
R;Hall, J-A.; Harris, M.A.; Malark, M.; Mansson, P.E.; Zhou, H.; Harris, S.E.
J. Cell. Biochem. 43, 17-26, 1990
A;Title: Characterization of the hamster DDT-1 cell aFGF/HGBF-I gene and cDNA an A;Reference number: A60721; MUID:90270291
A;Accession: A60721
A;Status: not compared with conceptual translation
A;Residues: 1-155 cHAL>
C;Repwords: growth factor; heparin binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        basic fibroblast growth factor precursor, 25K-c; Species: Cavia porcellus (guinea pig) C; Date: 20-Oct-1989 #sequence_revision 20-Oct-19 C; Accession: A32484
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Biochen. Biophys. Res. Commun. 160, 1267-1274, 1989
A;Title: An amino-terminally extended and post-trans
A;Reference number: A32484; MUID:89273588
A;Accession: A32484
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118
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                                                                                    KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
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                                T--SWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS 155
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AEKNWFVGLKKNGSCKRGPRTHYGQKAILFLPLPVSS
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Pred. No. 4.5e
2; Mismatches
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154
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acidic fibroblast growth factor 1 precursor [validated] - human
N; Alternate names: beta ECGF; endothelial cell growth factor beta; heparin-binding growt
C; Species: Homo sapiens (man)
C; Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 08-Dec-2000
C; Accession: A33665; A33316; S18217; A44804; A24662; H90707; S35535; S35536; I39413; A23
R; Mergia, A.; Tischer, E.; Graves, D.; Tumolo, A.; Miller, J.; Gospodarowicz, D.; Abraha
Biochem. Biophys. Res. Commun. 164, 1121-1129, 1989
A; Title: Structural analysis of the gene for human acidic fibroblast growth factor.
A; Reference number: A33665; MUID:90073637
A; Accession: A3365
A; Molecule type: DNA
A; Residues: 1-155 CMERD
A; Colle type: DNA
A; Residues: 1-155 CMERD
A; Coll. Biol. 9, 2387-2395, 1989
A; Title: Cloning of the gene coding for human class 1 heparin-binding growth factor and
A; Reference number: A32316; MUID:89343957
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A;Title: Endothelial cell growth factors in er A;Reference number: S02639; MUID:88296438
A;Accession: S02639
A;Molecule type: protein
A;Residues: 22-30, 'x', 32-44, 'X', 46-48 <RIS>C;Superfamily: fibroblast growth factor
C;Keywords: growth factor
                                A;Cross-references: GB:M23087; NID:g183875; PIDN:AAA52638.1; PID:g386768 R;Wang, W.P.; Quick, D.; Balcerzak, S.P.; Needleman, S.W.; Chiu, I.M. Oncogene 6, 1521-1529, 1991 A;Title: Cloning and sequence analysis of the human acidic fibroblast groups of the human
                                                                                                                                                                                          A; Accession: A32316
A; Molecule type: DNA
A; Residues: 1-155 <WAN>
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A33665
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A; Reference
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A; Residues: 1-155 <SCH>
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and sequence analysis of er: S18217; MUID:92019819
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A;Molecule type: mRNA
A;Residues: 1-40 <RES>
A;Cross-references: GB:M60515; NID:g178226; PIDN:AAA51672.1; PID:g55
A;Cross-references: GB:M60515; NID:g178226; PIDN:AAA51672.1; PID:g55
A;Cross-references: GB:M60515; NID:g178226; PIDN:AAA51672.1; PID:g55
A;Cross-reference number: A23553; MUID:86296647
A;Reference number: A23553; MUID:86296647
A;Accession: A23553
A;MOlecule type: protein
A;Residues: 16-15 < HAR>
R;Gimenez-Gallego, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
Biochem. Biophys. Res. Commun. 138, 611-617, 1986
A;Title: The complete amino acid sequence of human brain-derived acia.
A;Reference number: A24820; MUID:86295741
A;Residues: 16-47 <GI2>
A;Esperimental source: br
R;Gautschi, P.; Frater-co
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R;Crumley, G.; Dionne, C.A.; Jaye, M.
R;Crumley, G.; Dionne, C.A.; Jaye, M.
Biochem. Biophys. Res. Commun. 171, 7-13, 1990
A;Title: The gene for human acidic fibroblast
A;Reference number: I39412; MUID:90365758
A;Accession: I39413
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A; Molecule type: mRNA
A; Residues: 1-155 < YUY>
A; Cross-references: GB: X65778; NID: g396163;
A; Cross-references: GB: X65778; Chotani, M.A.;
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                                                                                                                                                      R;Gimenez-Gallego, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A. Biochem. Biophys. Res. Commun. 135, 541-548, 1986
A;Title: Human brain-derived acidic and basic fibroblast growth
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Nucleic Acids Res. 21, 489-495, 1993
A;Title: Cloning of two novel forms of hu
A;Reference number: S35535; MUID:93181239
                                                                                                                                                                                                                                                                                   A; Reference number: A; Accession: A24820
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R;Chiu, I.M.; Wang, W.P.; Lehtor
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A; Molecule type: DNA
A; Residues: 1-155 <WA2>
                                                                                                           A; Reference number: A; Accession: A24243
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A; Residues: 16-155 <GIM>
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A; Residues: 1-58 <PA2>
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A; Accession: S35536
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A; Residues: 1-58 < PAY>
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A; Residues: 1-155 < JAY>
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A: Residues: 1-155 < CHI>
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               source: brain
; Frater-Schroder,
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Wang, W.P.; Harri
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avera, M.W.;
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N;Alternate names: heparin-binding growth factor 1
C;Species: Rattus norvegicus (Norway rat)
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 16-Jul-1999
C;Accession: S04147
R;Goodrich, S.P.; Yan, G.C.; Bahrenburg, K.; Mansson, P.E.
Nucleic Acids Res. 17, 2867, 1989
A;Title: The nucleotide sequence of rat heparin binding growth factor 1 (HBGF-1): A;Reference number: S04147; MUID:89240051
A;Accession: S04147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Experimental source: brain R;Chavan, A.J.; Haley, B.E.; Volkin, D.B.; Marfia, K.E.; Verticelli, A.M.; Bruner, M.W. Biochemistry 33, 7193-7202, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: protein
A;Residues: 16-30,'X',32-49 <GAU>
R;Gautschi-Sova, P.; Muller, T.; Bohlen, P.
Biochem. Biophys. Res. Commun. 140, 874-880, 1986
A;Title: Amino acid sequence of human acidic fibroblast growth factor.
A;Reference number: A26386; MUID:87048871
A;Accession: A26386
                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-155 <GOO>
A; Cross references: EMBL: X14232; NID: 956351;
C; Superfamily: fibroblast growth factor
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C;Keywords: alternative splloing; growth factor; heparin binding
F;16-155/Product: fibroblast growth factor 1 #status experimental
F;129/Binding site: carbohydrate (Asn) (covalent) #status absent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Introns: 57/1; C; Superfamily: f:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GDB:119909; OMIM:131220
A;Map position: 5q31.3-5q33.2
A;Introns: 57/1; 91/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: protein A; Residues: 16-30,'X',32-38;73-75,'X',77-97,'X',99-101;128-131,'X',133-140,'X',142-152
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                                                Query Match
Best Local S
Matches 84
                                                                                                                                                                                   ; Keywords:
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118 AEKNWFVGLKKNGSCKRGPRTHYGQKAILFLPLPVSS
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Local Similarity 54.1%;
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  1 MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
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                                                   84; Conservative
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Pred. No. 3.9e-33;
Pred. No. 3.9e-33;
                                                Score 404.5; DB 2;
Pred. No. 1.2e-32;
7; Mismatches 51;
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Search completed: Job time: 243 sec

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C;Accession: D37360; JC5231
R;Hebert, J.M; Basilico, C;; Goldfarb, M.; Haub, O.; Martin, G.R.
Dev. Biol. 138, 454-463, 1990
A;Title: Isolation of cDNAs encoding four mouse FGF family members and characterizati A;Reference number: A37360; MUID:90201563
A;Accession: D37360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:M30641; NID:g193284; PIDN:AAA37618.1; PID:g309236 R;Madiai, F.; Hackshaw, K.V.; Chiu, I.M. Gene 179, 231-236, 1996
Gene 179, 231-236, 1996
A;Title: Cloning and characterization of the mouse Fgf-1 gene.
A;Reference number: JC5231; MUID:97128312
A;Accession: JC5231
                                                                                                                                                                                                                                                                                                                                                                                 A;Gene: Fgf-1
A;Introns: 57/1; 91/3
C;Superfamily: fibroblast growth factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Species: Mus musculus (house mouse)
C;Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
C;Accession: D37360; JC5231
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A; Residues: 1-155 <MAD>
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                       121 T--SWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
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GenCore version 4.5
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OM protein - protein search, using sw model

Run on: June 7, 2002, 14:46:42; Search time 23.13 Seconds (without alignments)
259.470 Million cell updates/sec

Title: US-09-802-365-8
Sequence: 826
Sequence: 1 MAAGSITTLPALPEDGGSGA......GSKTGPGQKAILFLPMSAKS 155

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224
Minimum DB seq length: 0
Maximum DB seq length: 2000000000
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

SwissProt_40:*

SUMMARIES

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217 26.3 208 1 FGF9 RAT 213 25.8 209 1 FGF9 RAT 210.5 25.8 209 1 FGF9 CANFA 210.5 25.5 194 1 FGF7_CANFA 210.5 25.4 211 1 FGFF, HUMAN 209.5 25.4 211 1 FGF7_HUMAN 209.5 25.1 194 1 FGF7_SHEEP 207.5 25.1 194 1 FGF7_SHEEP 206.5 25.0 207 1 FGFG_HUMAN 207.5 24.9 207 1 FGFG_HUMAN 208.5 24.9 207 1 FGFG_HUMAN 208.5 24.9 208 1 FGFA_BAT 208.5 24.9 208 1 FGFA_BAT 208.5 24.9 298 1 FGFA_BAT 208.5 24.9 194 FGFA_BAT 209.5 24.9 26.8 194 FGFA_BAT	26.3 208 1 25.5 209 1 25.5 2194 1 25.4 194 1 25.1 194 1 25.1 194 1 25.1 207 1 24.9 207 1 24.8 208 1 24.6 208 1	45
208 1 209 1 204 1 194 1 194 1 194 1 207 1 207 1 2194 1 2194 1	208 1 FGFY_RAT P3364 209 1 FGFY_EXELA P79150 194 1 FGFY_CANFA P79150 194 1 FGFY_HUMAN P79150 194 1 FGFY_HUMAN P3363 194 1 FGFY_HUMAN P3363 194 1 FGFY_SHEEP P4805E P27781 194 1 FGFY_SHEEP P4805 207 1 FGFG_RAT O43320 207 1 FGFT_PIG O54769 208 1 FGFA_HUMAN P31520 215 1 FGFA_HUMAN P70492	203
	1 FGF9_RAT P33364 1 FGF9_XENLA P79150 1 FGF7_CANFA P79150 1 FGF7_HUMAN P79150 1 FGF7_HUMAN P3363 1 FGF7_HUMAN P33633 1 FGF7_SHEEP P48008 1 FGFG_RAT O4370 1 FGF7_PIG O4370 1 FGF7_PIG O93190 1 FGFA_HUMAN P35520 1 FGFA_RAT P70492	24.6
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MEDLINE-87156686; PubMed-2435284;
MEDLINE-87156686; PubMed-2435284;
Story M.T., Esch F., Shimasaki S., Sasse J., Jacobs S.C., Lawson R.K.;
"Amino-terminal sequence of a large form of basic fibroblast growth factor isolated from human benign prostatic hyperplastic tissue.";
factor isolated from human benign prostatic hyperplastic tissue.";
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   This
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MEDLINE-91095983; PubMed-1702556;
Zhu X., Komiya H., Chirino A., Faham S
Hsu B.T., Rees D.C.;
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MEDLINE-92121151; PubMed-1769963;
Ago H., Kitagawa Y., Fujishina A., Mat.
"Crystal structure of basic fibroblast
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FEBS I
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Moy F.J., Seddon A.P., Boehlen P., Powers R.;
"High-resolution solution structure of basic
determined by multidimensional heteronuclear
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tal molecular characterization of endothelial cell mitogens from
    brain: acidic and basic fibroblast growth factors.";
Lett. 204:203-207(1986).
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P03969;
23-OCT-1986
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-OCT-1986 (Rel. 02, Created)
23-OCT-1986 (Rel. 02, Last sequence update)
23-OCT-1986 (Rel. 02, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin) [Contains: Kidney-derived growth
        MEDLINE=86095426; PubMed=4081126;
Baird A., Esch F., Boehlen P., Ling
"Isolation and partial characterizat
factor from the bovine kidney: homol
                                                                                                                                                                                                                   Esch F., Baird A., Ling N., Ueno N., Hill F., Denoroy L., Klepper R., Gospodarowicz D., Boehlen P., Guillemin R.; "Primary structure of bovine pituitary basic fibroblast growth factor (FGF) and comparison with the amino-terminal sequence of bovine brain
                                                                                                                                                                                                                                                                                                                    organization, and Cold Spring Harb.
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Abraham J.A., Whang J.L., Tumolo A., M.
"Human basic fibroblast growth factor:
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Eukaryota; Metazoa;
Mammalia; Eutheria;
factor from the
factor.";
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                                                                           SEQUENCE OF 25-41.
                                                                                                                    "Isolation of an amino 
growth factor.";
                                                                                                                                                                      SEQUENCE OF 1-9.
                                                                                                                                                                                                             acidic
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Cetartiodactyla;
         characterization kidney: homology
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                                                                                                     Commun.
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actyla; Ruminantia; Pe
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         Gospodarowicz D.; of an endothelial with basic fibrob
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Pfam; PF00167; FGF; 1.
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-i- FUNCTION: THE HEPAR
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A24819; A24819.

A32878; A32878.

1BAS; 31-OCT-93.
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., Rees D.C.
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Chirino A., Faham S.,
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Bovidae; Caprinae; (
NCBI_TaxID=9940;
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01-MR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2)
growth factor) (BFGF) (Prostatropin).
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MEDLINE=88055577; PubMed=3678486;
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FUNCTION: THE HEPARIN-BINDING GROWTH FACTOR IN VIVO AND ARE POTTENT MITOGENS FOR A VARIE VITYO. THERE ARE DIFFERENCES IN THE TISSUE CONCENTRATION OF THESE 2 GROWTH FACTORS.
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SEQUENCE OF 1-28 FKUM N....
STRAIN-SPRAGUE-DAWLEY; TISSUE=Testis;
MEDLINE=97200905; PubMed=9048734;
Pasumarthi K.B.S., Jin Y., Cattini P
                                                                                                                                                    Nucleic [3]
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P13109;
Ol-JAN-1990 (Rel. 13, Created)
Ol-JAN-1990 (Rel. 13, Last sequence update)
Ol-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin).
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Mammalia; Eutheria; Rode
MCBI_TaxID=10116;
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STRAIN=SPRAGUE-DAWLEY;
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                                                                                                                                                                                                                   Kurokawa T., Seno M., Igarashi
"Nucleotide sequence of rat bas
                                                                                                                                                                                                                                                                     MEDLINE=88262516;
                                                                                                                                                                                                                                                                                                           rissue=Brain;
                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM
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S00185; S00185.
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Rodentia;
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98.1%;
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rat basic_fibroblast growth
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Growth
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PROSITE; PS00247; HBGF_FGF; 1.
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InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=SPRAGUE-DAWLEY; TISSUE=Brain; MEDLINE=92329546; PubMed=1378302;
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FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIGGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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TISSUE SPECIFICITY:
MISCELLANEOUS: THIS
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154
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                              STANDARD;
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96.8%;
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PROTEIN BINDS HEPARIN MORE STRONGLY THAN
                                                                                                                                                                                                                                                                                                                                                            MW;
                                                                                                                                                                                                                                                                                    4.
                                                                                                                                                                                                                                                                                  Score 798.5;
Pred. No. 2e-7
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                       HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                      HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                           1A0F14FF423D8403
                                                                                                                                                                                                                                                                                                798.5; DB
No. 2e-76;
                                154
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Best Local
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                                                                                                                                                                              BINDING
BINDING
SEQUENCE
                                                                                                                                                                                                                     Growth
PROPEP
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MA R. 2., Teuscher C.;
Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITGGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-APR-1990 (Rel. 14, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin).
FGF2 OR FGF-2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hebert J.M., Basilico C., Goldfarb M., Haub O. "Isolation of cDNAs encoding four mouse FGF facharacterization of their expression patterns
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                             PRINTS; PR00262; ILLHBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
                                                                                                                                                                                                                                                                                                                  MGD; MGI:95516; Fgf2.
InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE=90201563; PubMed=2318343;
                                                                                                                                                                                                                                               PROSITE; PS00247; HBGF_E
Growth factor; Mitogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=C57BL/6J, A/J, AND NOD/LtJ; TISSUE=Spleen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
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                                                                                 <u>بـ</u>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY
                                                      KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCYTDECFFFERLESNNYNTYRSRKY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EM
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                                                                                                          al Similarity
147; Conser
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26
115
154 AA;
                                                                                                            Conservative
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118
17153
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                                                                                                                         94.9%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goldfarb M., Haub O., Martin G.R.; ing four mouse FGF family members a
                                                                                                           <u>ن</u>
                                                                                                                        Score 783.5;
Pred. No. 7.2
                                                                                                                                                                                             HEPARIN
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                                                                                                                                                                                                                       HEPARIN-BINDING GROWTH FACTOR
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There are no restrictions
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; Murinae;
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                                                                                                                                      154;
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FGF2_MONDO
                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 145; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P48798;
01-FEB-1996 (Rel. 33, Crearce,
01-FEB-1996 (Rel. 33, Last sequence upuace,
01-MAR-2002 (Rel. 41, Last annotation update)
01-MAR-2002 (Rel. 41, Last annotation update)
u-marin-binding growth factor 2 precursor (HBGF-2) (Basic update)
(BFGF) (Prostatropin).
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P48798;
01-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProDom; PD000831; HBGF_FGF; 1.

SMART; SM00442; FGF; 1.

PROSITE; PS00247; HBGF_FGF; 1.

Growth factor; Mitogen; Anglogenesis; Heparin-binding.

PROPED 1 9 BY SIMILARITY.

CHAIN 10 156 HEPARIN HOTENING GROWTH FACE BINDING 28 32 HEPARIN (POTENTIAL).

BINDING 17 120 HEPARIN (POTENTIAL).

BINDING 117 120 HEPARIN (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit institutions as long modified and this statement is not removed.
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Mammalia; Metatheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PR00262; IL1HBGF ProDom; PD000831; HBGF_FC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; Z15154; CAA78854.1; ALT_INIT HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=13616;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00167; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
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SUBUNIT: MONOMER.
MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ween the Swiss Institute of Bioinf
European Bioinformatics Institute.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through a collabora een the Swiss Institute of Bioinformatics and the EMBL outstati European Bioinformatics Institute. There are no restrictions on by non-profit institutions as long as its content is in more than the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the common of the comm
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                                                                                                                                                                     MAAGSITTLPALPED-GGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPH
                                                                                                                                            MAAGSITTLPALSGDGGGGGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGIREKSDPN
                                                 TKLQLQAEERGVVSTKGVCANRYLAMKEDGRLLALKYVTEECFFFERLESNNYNTYRSRK
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Metazoa; Chordata; Craniata; Vertebrata;
etatheria; Didelphimorphia; Didelphidae;
                                                                                                                                                                                                                                          Conservative
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92.9%;
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                                                                                                                                                                                                                                                                                    Score
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HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                 e 760.5; DL
No. 1.9e-72;
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Monodelphis.
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RESULT
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                                                                                                      Matches 142;
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Best Local Similarity
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BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasiani
                                                                                                                                                                                                                                                              PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF;
SMART; SM00442; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Expression of alternatively spliced bFGF first coding exons and antisense mRNAs during chicken embryogenesis.";
Dev. Biol. 157:110-118(1993).
-!- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIGGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Heparin-binding growth growth factor) (BFGF). FGF2 OR FGF-2.
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01-FEB-1996 (Rel. 33,
01-MAR-2002 (Rel. 41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHICK
                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                     Growth factor;
                                                                                                                                                                                                                                                                                                                                          HSSP; P09038;
                                                                                                                                                                                                                                                                                                                                                         EMBL; M95707; AAA48617.1; -.
                                                                                                                                                                                                                                                                                                                                                                                  or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                         the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=93246053; PubMed=7683281; Borja A.Z., Zeller R., Meijers C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-FEB-1996
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                                                                                                                                                                                                                                                                                                     Pfam; PF00167; FGF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  between
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                                                                                                                                                                                                                          PROPEP
                                                                                                                                                                                                                                                 PROSITE; PS00247; HBGF_FGF;
                                                                                                                                                                                                                                                                                                                InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through a collaboration sen the Swiss Institute of Bioinformatics and the EMBL outstation
             AAGS I TTLPALPDDGGGGAFPPGHFKDPKRLYCKNGGFFLR I NPDGRVDGVREKSDPHIK
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13
30
119
158 AA;
                                                                                                      Conservative
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                                                                                                                                                                    Mitogen; Angiogenesis; Heparin-binding.

1 12 BY SIMILARITY.

3 158 HEPARIN-BINDING GROWTH FAC.

0 34 HEPARIN (POTENTIAL).

9 122 HEPARIN (POTENTIAL).

9 127 HEPARIN (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
91.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
h factor 2 precursor (HB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTEIN BINDS HEPARIN MORE
                                                                                                                  Score 759;
Pred. No. 2.
                                                                                                                                                                                                             HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             precursor (HBGF-2)
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                                                                                                                                                                                                                                                                                                                                                                                              moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                  DB 1;
2.7e-72;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Phasianinae;
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122

SWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS

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125 DWYVALKRTGQYKPGPKTGPGQKAILFLPMSAKS 158

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RESULT 8
FGF2_RABIT
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Matches 136
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Winkles J.A., Friesel R., Alberts G.F., Janat M.F., Liau G.;
"Elevated expression of basic fibroblast growth factor in an
immortalized rabbit smooth muscle cell line.";
Am. J. Pathol. 143:518-527(1993).

-i- FUNCTION: THE HEDARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC
IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES
VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 2 (HEGF-2) (Bas factor) (BFGF) (Prostatropin) (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                        entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FGF2_RABIT P48799;
                                                                                                                                                                                                                                                                                                Growth
                                                                                                                                                                                                                                                                                                                                                                                  EMBL; L12034; AAA31248.1; -. HSSP; P09038; 1BFF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=NEW ZEALAND WHITE; TISSUE=Smooth muscle; MEDLINE=93343209; PubMed=8342599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Cı
Mammalia; Eutheria; Lagomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Oryctolagus
                                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                         ProDom;
                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR002209; HBGF_FGF.
Pfam; PF00167; FGF; 1.
                          130
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBUNIT: MONOMER. MISCELLANEOUS: TH
                                                     PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER 69
                         TGQYKLGSKTGPGQKAI 146
                                                                               GVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALKR 129
                                                                                                             PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEER
                                                                                                                                                                                                                                                                                                                         ; PD000831; HB0
SM00442; FGF;
                                                                                                                                                                                                                                                                                                factor;
                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                              PS00247; HBGF_FGF; 1.
actor; Mitogen; Angiogenesis; Heparin-binding.
18 22 HEPAR:N (POTENTIAL).
                                                                                                                                                                                                                                          137
137 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cuniculus (Rabbit).
Metazoa; Chordata; Craniata;
                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                       HBGF_FGF; 1.
                                                                                                                                                                                                                                 110 HEPARIN (POTENTIAL).
137
15418 MW; OD9E4457B88E8C51 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THIS
                                                                                                                                                                                 99.3%;
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                                                                                                                                                                                 Score 738; DB 1; Pred. No. 3.6e-70;
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ae; Oryctolagus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                   0;
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IN
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RESULT 9
FGF2_XENLA
ID FGF2_X
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Science
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    growun 1970

EGF2 OR FGF-2.

Xenopus laevis (African clawed frog).

Xenopus laevis (African clawed frog).

Xenopus laevis (African clawed frog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                     PROPEP
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                             Growth factor; Mitogen; Angiogenesis; Heparin-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     SMART; SM00442; FGF; PROSITE; PS00247; HB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PR00262; IL1HBGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR002209; HBGF_FGF.
InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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PIR; A40117; A40117.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kimelman D., Kirschner M.;
"Synergistic induction of mesoderm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. MEDLINE=89058621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      growth factor) (BFGF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP; P09038; 1BFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; M18067; AAA49726.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           identification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=88052890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kimelman D., Abraham J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=8355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Xenopodinae;
  61
                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         presence of fibroblast growth natural mesoderm inducer."; nce 242:1053-1056(1988).
MAAGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51:869-877(1987).
                                                                                                                                                                                                      Similarity
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                                                                                                                                                                                                                                                                                          1
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27
116
111
155
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                                                                                                                                                                                                                                                                                                               155
31
119
111
                                                                                                                                                                                                                                                                                             17241 MW;
                                                                                                                                                                                                    83.2%;
83.9%;
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                                                                                                                                                                               9,
                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                          HEPARIN (POTENTIAL).
MISSING (IN REF. 2).
; 036735C8063142FD CRC64;
                                                                                                                                                                                                                                                                                                                                                              HEPARIN
                                                                                                                                                                                                                                                                                                                                                                                   HEPARIN-BINDING GROWTH FACTOR
                                                                                                                                                                                 Mismatches
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FGF in the early X
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                                                                                                                                                                               16;
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; Pipidae;
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FGF1_CHICK
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Matches 86
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PIR; A60721, A60721.

HSSP; P05230; IRML.

InterPro; IPR002209; HBGF_FG

InterPro; IPR002348; IL1_HBG

Pfam; PF00167; FGF; 1.
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1_MESAU
FGF1_CHICK P19596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P34004;
01-FEB-1994
01-FEB-1994
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProDom: PD000831: HBGF_FGF; 1.

SMART; SM00442: FGF; 1.

PROSITE; PS00247; HBGF_FGF; 1.

Growth factor; Mitogen; Anglogenesis; Heparin-binding.

PROPEP 1 15 BY SIMILARITY.

CHAIN 15 HEPARIN-BINDING GROWTH FF
BINDING 24 28 HEPARIN (POTENTIAL).

BINDING 13 116 HEPARIN (POTENTIAL).

SEQUENCE 155 AA; 17403 MW; 41E5EC760E412CC5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -!- SUBUNIT: MONOMER.
-!- MISCELLANBOUS: THIS PROTEIN BINDS HEPARIN,
THAN DOES BEGF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE=90270291; PubMed=169386;
MEDLINE=90270291; PubMed=169386;
MEDLINE=90270291; PubMed=169386;
MALAN MALAN M., Mansson P.E., Zhou H., Harris Hall J.A., Harris M.A., Malark M., Mansson P.E., Zhou H., Harris M.A., Harris M.A., Harris M.A., Malark M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Zhou H., Harris M., Mansson P.E., Mansson P.E., Zhou H., Harris M., Mansson P.E., Mansson P.E., Mansson P.E., Mansson P.E., Zhou H., Harris M., Mansson P.E., Mansson P.E., Mansson P.E., Zhou H., Harris M., Mansson P.E., M
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10036;
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                                                                                                                                                                           T--SWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
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                                                                                                                                                                                                                                              KLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKY 120
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PD000831; HBGF_F0
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41, Last annotation updat
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                                                                                                                                                                                                                                                                                                                                                                                                16;
                                                                                                                                                                                                                                                                                                                                                                                          Score 418.5;
Pred. No. 1e-3
L6; Mismatches
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No. 1e-36;
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SEQUENCE
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Martin G.
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01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
01-Mar-in-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Alpha-endothelial cell growth factor).
FGF1 OR FGF-1.
                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                            HSSP; P05230; 2AXM.
Interpro; IPR002209; HBGF_FGF.
Interpro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; S63263; AAB19629.1; -.
EMBL; U31863; AAA80310.1; -.
EMBL; S63261; AAD13942.1; -.
PIR; S02639; S02639.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or send an email to license@isb-sib.ch).
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"Endothelial cell growth factors in embryonic
are related to human acidic fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=88296438; PubMed=3402441;
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"Differentiating and mature neurons growth factor gene during chick neuropeyelopment 111:1143-1154(1991).
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                                                                                                                                                                                                                                                                                            PROSITE;
                                                                                                                                                                                                                                                                                                                     SMART; SM00442; FGF;
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ProDom; PD000831; HBGF_FGF;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      European Bioinformatics Institute. There are no rest
by non-profit institutions as long as its content
ified and this statement is not removed. Usage by an
ities requires a license agreement (See http://www.isb-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              THAN DOES BEGE. SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISCONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D. J. 7:959-962(1988).

J. 7:959-962(1988).

FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES
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                      Similarity
                                                                                                                                                                                                                                                                                            PS00247; HBGF_FGF;
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  Conservative
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                                                                                                                         AA;
                                                                                                                                                                                                                                                                     Mitogen;
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Neognathae; Galliformes; Phasianidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                         17322
                    49.7%;
54.9%;
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  20;
Score 410.5;
Pred. No. 6.9e
20; Mismatches
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                                                                                                                       HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
; 8EDB70545E2B4365 CI
                                                                                                                                                                                                 ENDOTHELIAL CELL GROWTH FACTOR ALPHA.
                                                                                                                                                                                                                       HEPARIN-BINDING GROWTH FACTOR
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neural development.";
                    410.5; DB 1
No. 6.9e-36;
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                                                DB 1;
  44;
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|dae; Phasianinae;
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FGF1_HUMAN
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13-AUG-1987 (Rel. 05, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Beta-endothelial cell growth factor) (ECGF-
                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=90073637; PubMed=2590193; Mergia A., Tischer E., Graves D., Tumolo Gospodarowicz D., Abraham J.A., Shipley
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Eukaryota; Metazoa; Chordata;
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MEDLINE=89343957; PubMed=2474753;
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MEDLINE=92019819; PubMed=1717925;
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Lozano R.M., Jimenez M., Santo
"Solution structure of acidic
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FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC IN VIVO AND ARE POTENT WITOGENS FOR A VARIETY OF CELL TYPES VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
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                                                                                      49.68;
                                                                                                                                                                                                                                                                                    HBGF_FGF.
                                                                                                                                                                                                                  Angiogenesis;
                                                                                                                                    ₩,
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                                                                                                                                   HEPARIN-BINDING GROW
ACETYLATION.
HEPARIN (POTENTIAL).
HEPARIN (POTENTIAL).
F586E8BFB09F1580 C
                                                                                      Score
Pred.
                                                                             Mismatches
                                                                                       409.5;
No. 8.
                                                                                                                                                                                                                  Heparin-binding; Acetylation;
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                                                              DB
8.7e-36;
9s 51;
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RESULT
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E growth factor) (AFGF).

N FGF1 OR FGF-1 OR FGFA.

Mus musculus (Mouse), and
Rattus norvegicus (Rat).
Eukaryota; Metazoa: Characa
 EMBL;
EMBL;
                                                entities re
or send an
                                                                                                                         This
                                                                                                                                                                                                                                                                        SPECIES=Mouse; STRAIN=BALB/C; MEDLINE=97094746; PubMed=8939980; Alam K.Y., Frostholm A., Hackshaw
                                                                                                                                                                                                                                                                                                                                    Gene 179
                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=90201563; PubMed=2318343;
Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.;
"Isolation of cDNAs encoding four mouse FGF family members and
characterization of their expression patterns during embryogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=89240051; PubMed=2470029; Goodrich S., Yan G.C., Bahrenburg "The nucleotide sequence of rat he
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia; NCBI_TaxID=10090, 10116;
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01-JUL-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOUSE
FGF1_MOUSE
                                                                                                                                                                      "Characterization of the 1B promoter of fibroblast growth factor and its expression in the adult and developing mouse brain."; J. Biol. Chem. 271:30263-30271(1996).

-i- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC FIN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES I VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
                                                                                                                                                                                                                                                               Chiu I.M.;
                                                                                                                                                                                                                                                                                                              SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                             Madiai F.,
                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=97128312;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic Acids Res. 17:2867-2867(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "The nucleotide sequence (HBGF-1).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SPECIES=Rat;
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                                                                                    s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EME EUROPEAN BIOINFORMATICS. Institute. There are no restrictly by non-profit institutions as long as its content
                                                                                                                                                  SIMILARITY: BELONGS
                                                                                                                                                             SUBUNIT: MONOMER
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M30641;
U36459;
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                                                non-profit institutions as long and this statement is not removed. requires a license agreement (See an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                          138:454-463(1990).
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; AAA37618.1; -.
; AAC52969.1; -.
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Sharma H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             p20002;
01-FEB-1991 (Rel. 17, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Alpha-endothelial cell growth factor)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSSP; P05230; 1RML.
MGD; MGI: 95515; Fgf1.
InterPro; IPR002209; HBGF_FGF
InterPro; IPR002348; IL1_HBGF
Pfam; PF00167; FGF; 1.
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Eukaryota; Metazoa;
Mammalia; Eutheria;
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ProDom: PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE: PS00247; HBGF_FGF; 1.
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EMBL;
EMBL;
PIR; S
                                                     "Isolation of heparin-binding growth canine hearts.";
Eur. J. Biochem. 181:67-73(1989).
                                                                                                                                                                                                                                                            MEDLINE-92062117; PubMed-1719973;
Schmidt M., Sharma H.S., Schott R.J., Schaper W
"Amplification and sequencing of mRNA encoding
growth factor (aFGF) from porcine heart.";
                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
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                                                                                                                                                                             MEDLINE=89231704; PubMed=2714282;
                                                                                                                                                                                                                                             Biochem.
                                                                                                                                                                                                                                                                                                                                               TISSUE=Heart;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FGF1 OR FGF-1.
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                                                                                                                                                                                                    SEQUENCE
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Ine hearts."; J. Biochem. 181:67-73(1989).

FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC FUNCTION: AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN THE TISSUE DISTRIBUTION AND
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H.S., Schaper W.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49.0%;
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Best Local Similarity
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                                                                                                                                                                                                                                           23-OCT-1986 (Rel. 02, Created)
01-MAR-1989 (Rel. 10, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic growth factor) (AFGF) (Prostatropin) (Endothelial cell growbeta and alpha chains) (Acidic eye-derived growth factor II
                                                                                                                                                                                                                                                                                                                                                                           FGF1_BO
P03968;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00442; HBGF_FGF; 1.
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                                                                                                   Mammalia; Eutheria;
Bovidae; Bovinae; Bo
NCBI_TaxID=9913;
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                       MEDLINE=89083506; PubMed=3205724;
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                                             TISSUE-Retina
                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                     Bos taurus
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54.2%; Pred. No. 3.6
tive 17; Mismatches
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HEPARIN (POTENTIAL).
C -> S (IN REF. 2).
R -> Y (IN REF. 2).
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Science 230:1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gimenez-Gallego G., Ro
Disalvo J., Thomas K.;
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MEDLINE-87026586;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Burgess W.H., Mehlman T., Marshak D.R., Fraser B.A., Maciag T.; "Structural evidence that endothelial cell growth factor beta is t precursor of both endothelial cell growth factor alpha and acidic fibroblast growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-89078619; PubMed=2849564; Alterio J., Halley C., Brou C., Soussi T., Courtois Y., "Characterization of a bovine acidic FGF cDNA clone and expression in brain and retina."; FEBS Lett. 242:41-46(1988).
                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 16-56 FROM N.A.
MEDLLINE-86361806; PubMed=2425435;
Abraham J.A., Mergia A., Whang J.L., Tumolo A.,
Abraham J.A., Mergia A., Whang J.L., Tumolo A.,
Hjerrild K.A., Gospodarowicz D., Fiddes J.C.;
"Nucleotide sequence of a bovine clone encoding
protein, basic fibroblast growth factor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIINE-86055750; PubMed=4065099;
Boehhen P., Esch F., Baird A., Gospodar
"Acidic fibroblast growth factor (FGF)
amino-terminal sequence and comparison
EMBO J. 4:1951-1956(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-86070224;
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Bordoli R.S., McKeehan W.L.;
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                                                                                                      "Three-dimensional structures
                                                                                                                                                                                                                                                                                                           Quinkler W., Maasberg M.;
Sharma H.S., Schaper W.;
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MEDLINE=89231704; PubMed=2714282;
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                                                                                                                                                      x-ray Crystallography (3.0 angstroms).
MEDLINE-91095983; PubMed-1702556;
                                                                                                                                                                                                     Submitted (JUL-1992) to the
                                                                                                                                                                                                                     SEQUENCE OF 1-18 FROM N.A. Philippe J.M., Renaud F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Complete
                                                                                           factors.
                                                                                                                                                                                                                                                                                              "Isolation of
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                                                                                                                         X., Komiya H., Chirino
B.T., Rees D.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            plete primary structure of
growth factor.";
                                                                                                                                                                                                                                                                 J. Biochem. 181:67-73(1989).
                                                                                                                                                                                                                                                                             cion of heparin-binding growth hearts.";
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230:1385-1388(1985).
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ProDom; PD000831; HBGF_F0
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PDB; 1AFC; 31-OCT-93.
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IL; X13221; CAA316

IL; X13221; CAA316

IL; X14032; CAA305

IL; M35608; AAA305

IL; M97660; AAA305

IL; M9
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MISCELLANEOUS: THIS
THAN DOES BFGF.
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                    AAA30516.1;
CAA31610.1;
CAA32192.1;
AAA30517.1;
CAA47063.1;
AAA30563.1;
AAA30563.1;
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(POTENTIAL). (POTENTIAL).

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Q925a3 mus musculu
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Q98td8 cynops pyrr
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Q925a1 mus musculu
Q925a2 mus musculu
P79706 cynops pyrr
Q07659 gallus gall
Q9n0v2 ovis aries
Q00527 homo sapien
Q16443 homo sapien
Q9n1s8 capreolus c
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Q1-NOV-1996 (TrEMBLrel. 01, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update).
Q1-MAY-2000 (TrEMBLrel. 17, Last annotation update)
Q1-JUN-2001 (TREMBLrel. 17, Last annotation update)
Q1-JUN-2001 (FROWTH FACTOR 2 (FGF-2) (FIBROBLAST GROWTH FACTOR, BASIC)
PIBROBLAST GROWTH FACTOR 2 (FGF-2) (HBGF-2) (PROSTATROPIN)
(BFGF) (HEPARIN-BINDING GROWTH FACTOR 2) (HBGF-2) (PROSTATROPIN)
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Mammalia; Eutheria;
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RA MOSCATELLI D. JOSEPH-SILVENTERIN J., MANEJIAS R., RIFKIN D.B.;

RRI "Mr 25,000 heparin-binding protein from guinea pig brain is a high

RRI "Mr 25,000 heparin-binding protein from guinea pig brain is a high

RRI molecular weight form of basic fibroblast growth factor.";

RL Proc. Natl. Acad. Sci. U.S.A. 84:5778-5782(1987).

CC FROCESSES, LOCLUDING LIMB DEVELOPMENT, ANGIOGENIC, AND NEUROTROPHIC

CC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND

CC PROLIFERATION, AND TUMOR GROWTH. POTENT MITOCEN AND CHEMOATTRACTANT FOR

CC MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION,

CC PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL MERVOUS

CC SYSTEM AND IN BONE FORMATION MAJOR ANGIOGENIC FACTOR THAT ALSO

CC ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).

CC -I- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFR1 AND AT LEAST

CC (SHOWN HERE); MAY BE PRODUCTS: AT LEAST TWO ISOFORMS; 18 KDA AND 25 KDA

CC (SHOWN HERE); MAY BE PRODUCED BY USE OF ALTERNATIVE TRANSLATION

CC INTRODUCED TROM RESIDUES 71, 88, 93 AND 149 DOWNWARD TO EXTEND THE

CC INTRODUCED FROM RESIDUES 77, 88, 93 AND 149 DOWNWARD TO EXTEND THE

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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
NCBI_TaxID=10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "An amino-terminally extended and
of a 25kD basic fibroblast growth
                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR00262; IL1HBGF. 
ProDom; PD000831; HBGF_FGF; 
SMART; SM00442; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR002209;
InterPro; IPR002348;
Pfam; PF00167; FGF; 1
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                                                                                                                                                                                                                                                                        Developmental
                                                                                                                                                                                                                                                                                                 Alternative
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Susaki K., Nakamura K
"Expression of FGF2 of
regeneration.";
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Eukaryota; Metazoa; Chordata;
Amphibia; Batrachia; Caudata;
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Last annotation update)
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Pred. No. 8e-73;
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METHYLATION (MONO- OR DI-).

METHYLATION (MONO- OR DI-).

METHYLATION (MONO- OR DI-).

PHOSPEORYLATION (BY SIMILARITY).

PHOSPHORYLATION (BY SIMILARITY).
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Salamandroidea; Salamandridae; Cynops
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Trochta O.A., Jacobs R.M., LaMarre J.;

"The role bfGf in canine Hemangiosarcoma.";

RL Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.

Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.

C. -!- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANCIOGENIC, AND NEUROTROPHIC PACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC CONTROL TO THE PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND CONTROL AND THE PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND CONTROL AND THE AND THE DIFFERENTIATION, AND MAINTENANCE OF CELLS IN THE DIFFERENTIATION, CONTROL THE DIFFERENTIATION, PROLITERATION, AND MAINTENANCE OF CELLS IN THE CEMTRAL NERVOUS CONTROL NEOVASCULARIZATION (BY SIMILARITY).

C. -!- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFRI AND AT LEAST CONTROL THE PERARN SULFATE (BY SIMILARITY).

C. -!- SUBUNIT: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.

DR HASSP; D9038; 1BFF.

C. TEROC. TEROCOCORD. URGS FOR
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Q9BDX1;
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Canis familiaris (Dog).
Caniata; Vertebrata;
Craniata; Vertebrata;
Canidae;
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Growth factor; Mitogen; Vascularization;
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ProDom; PD000831; HBGF_FGF;
SMART; SM00442; FGF; 1.
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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SEQUENCE FROM N.A.
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Mammalia; Eutheria; Carnivora;
MCBI_TaxID=9615;
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UN-2001 (TrEMBLrel. 1
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HEPARIN (BY SIMILARITY).
HEPARIN (BY SIMILARITY).
PHOSPHORYLATION (BY SIMILARITY).
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                                                                                                                                                                        PRINTS; PR00262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
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Eukaryota; Metazoa; Chordata;
Amphibia; Batrachia; Caudata;
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ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE; PS00247; HBGF_FGF; 1.
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Submitted (MAR-2000) to the
EMBL; AF251270; AAK37962.1;
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"Alterations in Collagen and Elastin Gene Expression in I
"Alterations in Keller J.K., Spindel E.R.;
Pulmonary Vessels in Monkeys Following Prenatal Nicotine
Possible Role of alpha7 Nicotinic Acetylcholine Receptor
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata;

Mammalia; Eutheria; Primates; Catarrhini; Cercopithe
Cercopithecinae; Macaca.
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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InterPro; IPR002348; IL1_HBGF.
Pfam; PF00167; FGF; 1.
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                                                                                                                                                PROSITE; PS00247; HBGF_FGF; 1.
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Craniata; Vertebrata;
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Eukaryota; Metazoa; Chordata; Cranian Mammalia; Eutheria; Cetartiodactyla; Cervidae; Odocoileinae; Capreolus.
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EMBL; AF152587; AAF
HSSP; P09038; 4FGF.
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01-OCT-2000 (TrEMBLrel. 15, Last sequence |
01-DEC-2001 (TrEMBLrel. 19, Last annotatio)
BASIC FIBROBLAST GROWTH FACTOR (FRAGMENT).
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Dirks R.P., Griep A.E.;
Dirks R.P., Griep A.E.;
Multiple novel variants of fibroblast gr
expressed in mouse embryos.";
Submitted (PEB-2001) to the EMBL/GenBank,
EMBL; AY027557; AAK52309.1; -.
EMBL; AY027557; AAK52309.1; -.
                   P79706 PRELIMINARY;
P79706;
01-MAY-1997 (TrEMBLrel. 0
01-MAY-1997 (TrEMBLrel. 0
01-DEC-2001 (TrEMBLrel. 1
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Q925A2;
Q925A2;
Q1-DEC-2001
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FIBROBLAST GI
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Submitted
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Eukaryota; Metazoa;
Mammalia; Eutheria;
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Mammalia; Eutheria;
NCBI_TaxID=10090;
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Dirks R.P., Griep A.E.;
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NCE 109 AA; 12388 MW; 61074ADE3303C8
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Metazoa; Chordata; C
Metazoa; Rodentia; C
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Sciurognathi; Muridae;
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.2e-45;
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.3e-45;
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Query Match
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Matches 88
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Eukaryota; Metazoa; Cl
Amphibia; Batrachia; C
NCBI_TaxID=8330;
[1]
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01-NOV-1996 (TrEMBLrel. 01
01-NOV-1996 (TrEMBLrel. 01
01-JUN-2001 (TrEMBLrel. 17
FIBROBLAST GROWTH FACTOR.
                                                                                                                                                                   Borja A.Z., Zeller R., Meijers C.;
"Expression of alternatively spliced antisense mRNAs during chicken embryo Dev. Biol. 157:110-118(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
SEQUENCE
             InterPro;
InterPro;
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MEDLINE=93246053; PubMed=7683281;
MEDLINE=93246053; PubMed=7683281;
Medijers C.
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Submitted (NOV-1996) to tl
EMBL; D89443; BAA13958.1;
HSSP; P09038; 4FGF.
                                         Development 109:387-393(1990).
EMBL; M95706; AAA48616.1; -.
EMBL; X56804; CAA40139.1; -.
HSSP; P09038; ZBFH.
                                                                                                            SEQUENCE OF 52-85 FROM N.A.
MEDLINE-90382254; PubMed-2401202;
Mitrani E., Gruenbaum Y., Shohat |
"Fibroblast growth factor during |
                                                                                                                                                                                                                                                                                                                                Gallus gallus (Chicken).
Eukaryota: Metazoa; Chordata;
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ProDom; PD000831; HBGF_FGF;
SMART; SM00442; FGF; 1.
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InterPro; IPR002348;
Pfam; PF00167; FGF; 1
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Kaneda T.;
                                                                                                                                                                                                                                                                                      NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                  Archosauria;
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||KRLYCKNGGFFLRINSDGKVDGAREKSDSYIKLQLQAEERGVVSIKGVCANRYLAMKDD
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Pro; IPR002209; HBGF_FGF. Pro; IPR002348; IL1_HBGF PF00167; FGF; 1.
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101 AA;
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Last annotation update)
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Salamandroidea;
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3.6e-44;
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Salamandridae; Cyno
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Q9NOV2;
Q9NOV2;
01-OCT-2000
01-OCT-2000
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ProDom; PD000831; HBGF_FGF; 1.
SMART; SM00442; FGF; 1.
PROSITE: PS00247; HBGF_FGF; 1.
SEQUENCE 146 AA; 16182 MW;
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Eukaryota; Metazoa;
                                                                                                                                               PROSITE; PS00247; HBGF_FGF; NON_TER 1 1 1 NON_TER 76 76
                                                                                                                                                                                       PRINTS; PRO0262; IL1HBGF.
ProDom; PD000831; HBGF_FGF; 1.
                                                                                                                                                                                                                                                       EMBL; AF250027;
                                                                                                                                                                                                                                                                            cells."
                                                                                                                                                                                                                                                                                     Zheng J., Tsoi S.C., Magness R.R.; "Growth factor expression in ovine
                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
TISSUE-FETAL PLACENTAL ARTERY;
                                                                                                                                                                                                                                                                                                                                       Mammalia; Eutheria;
Bovidae; Caprinae; C
NCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                              FGF-2.
                                                                                                                                      SEQUENCE
                                                                                                                                                                                SMART; SM00442; FGF;
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61
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                                                   DPHIKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFFERLESNNYNTYR 116
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RTGQYKPGPKTGPGQKAILFLPMSAKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RTGQYKLGSKTGPGQKAILFLPMSAKS 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RGVVSIKGVSANRFLAMKEDGRLLALKCATEECFFFERLESNNYNTYRSRKYSDWYVALK 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRKYTSWYVALK
 SRKYSQLVCGTETNW
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IPR002348; IL1_HBGF.
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)BLAST GROWTH
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Conservative
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Cetartiodactyla; Ruminantia;
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88.0%;
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. 19 (FRAGMENT).
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9; Mismatches
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Pred. No. 1.2e
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No. 2.9e-43;
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minantia; Pecora; Bovoidea
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RESULT
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Best Local
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Q16443;
Q16443;
Q1-NOV-1996 (TrEMBLrel. 0
Q1-NOV-1996 (TrEMBLrel. 0
Q1-JUN-2001 (TrEMBLrel. 1
BASIC FIBROBLAST GROWTH F
                       NON_TER
                                                                                                                                                  SEQUENCE FROM N.A.

MEDLINE-92152654; Pubmed-1785797;

MEDLINE-92152654; Pubmed-1785797;

Florkiewicz R.Z., Shibata F., Barankiewicz T., Bail

Gonzalez A.M., Florkiewicz E., Shah N.;

"Basic fibroblast growth factor gene expression.";

Ann. N. Y. Acad. Sci. 638:109-126(1991).

EMBL; S81809; AAB21432.2; -.
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Mutations in the 5' untranslated region of the FGF-2 gene: t. G to A on position 19 and transversion G to C on position 97. Submitted (NOV-1999) to the EMBL/GenBank/DDBJ databases. EMBL: 13468; CAA73868.1; ...
                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human).

Mortazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1999 (TrEMBLrel. 09, Last sequence
01-JUN-2001 (TrEMBLrel. 17, Last annotatio
BASIC FIBROBLAST GROWTH FACTOR (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                000527;
01-JAN-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Handschug K., Glaeser C.;

"Polymorphism in the 5' untranslated region of the FGF-1

transition (79 bp upstream of the first CTG codon).";

Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FGF-2 OR FGF2.
                                                                    Pfam; PF00167; FGF; ProDom; PD000831; H
                                                                                                                 InterPro;
                                                                                                                                         EMBL; S81809; AAB2.
HSSP; P09038; 1BFF
                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                       Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002209; HBGF_FGF.
Pfam; PF00167; FGF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-BLOOD;
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llarity 100.0%;
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       AΑ;
                                                                    HBGF_FGF;
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11688 MW;
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       11670 MW;
                                                                                                                   HBGF_FGF
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H FACTOR (FRAGMENT).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98DC6381C1960C1D CRC64;
       88DCA49C774D61AA CRC64;
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